



# SPEC<sup>®</sup> CINT2006 Result

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Dell Inc.

SPECint<sup>®</sup>\_rate2006 = 97.4

PowerEdge 2950 III (Intel Xeon E5405, 2.00 GHz)

SPECint\_rate\_base2006 = 86.2

CPU2006 license: 55

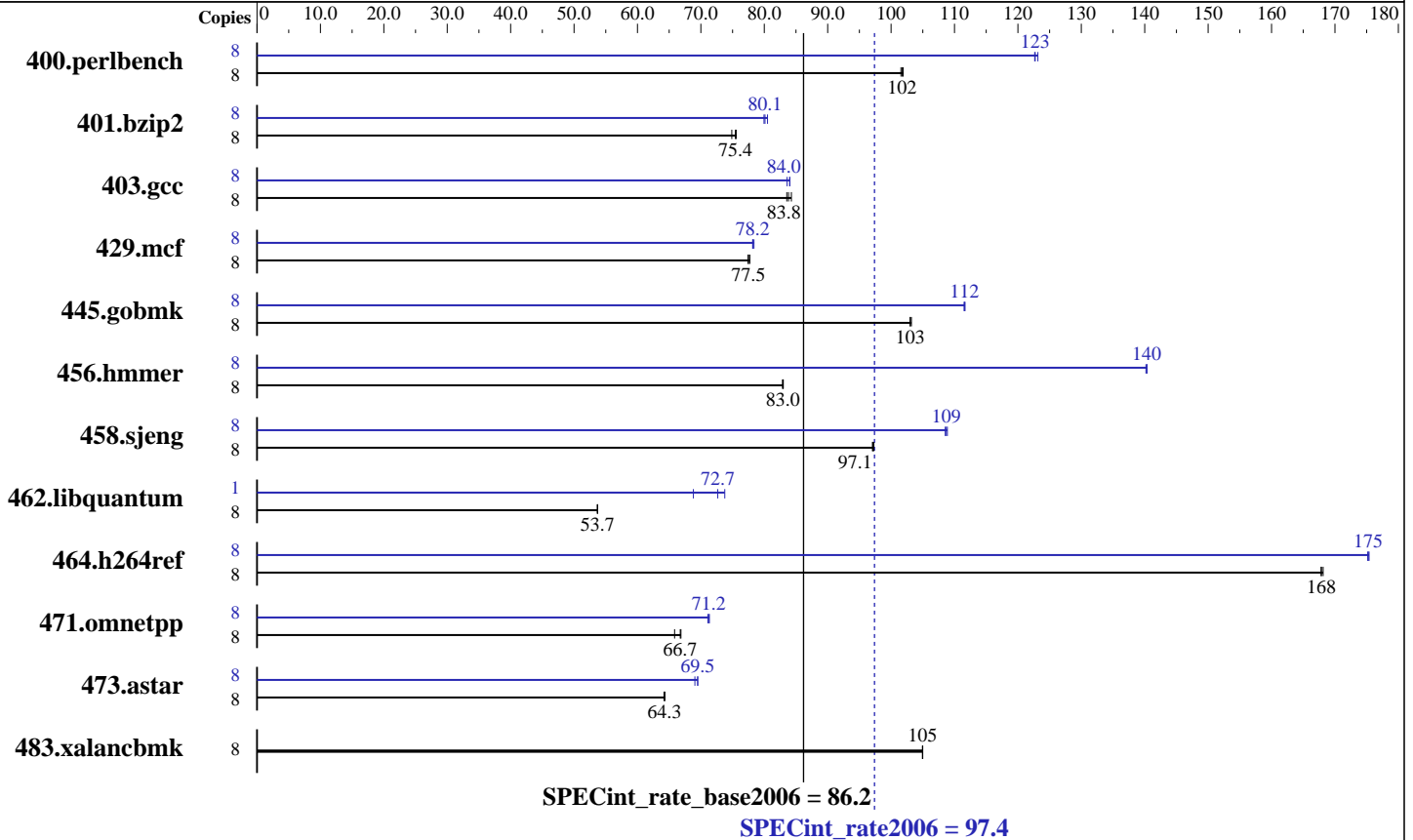
Test date: Feb-2008

Test sponsor: Dell Inc.

Hardware Availability: Jan-2008

Tested by: Dell Inc.

Software Availability: Nov-2007



## Hardware

CPU Name: Intel Xeon E5405  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 2000  
 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 (8 x 2 GB 667 MHz ECC CL5 FB-DIMM)  
 Disk Subsystem: 1 x 73 GB 15000 RPM SAS  
 Other Hardware: None

## Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ Compiler 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 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 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      | <b>768</b>  | <b>102</b>  | 770        | 102         | 767         | 102         | 8      | <b>637</b> | <b>123</b>  | 637         | 123         | 635        | 123         |
| 401.bzip2      | 8      | <b>1023</b> | <b>75.4</b> | 1021       | 75.6        | 1031        | 74.9        | 8      | 966        | 80.0        | <b>964</b>  | <b>80.1</b> | 959        | 80.5        |
| 403.gcc        | 8      | <b>768</b>  | <b>83.8</b> | 771        | 83.6        | 764         | 84.3        | 8      | <b>767</b> | <b>84.0</b> | 766         | 84.0        | 770        | 83.6        |
| 429.mcf        | 8      | 942         | 77.4        | 939        | 77.7        | <b>941</b>  | <b>77.5</b> | 8      | <b>933</b> | <b>78.2</b> | 933         | 78.2        | 931        | 78.4        |
| 445.gobmk      | 8      | 813         | 103         | 815        | 103         | <b>814</b>  | <b>103</b>  | 8      | 753        | 112         | <b>752</b>  | <b>112</b>  | 752        | 112         |
| 456.hammer     | 8      | 899         | 83.0        | <b>900</b> | <b>83.0</b> | 901         | 82.9        | 8      | 532        | 140         | <b>532</b>  | <b>140</b>  | 532        | 140         |
| 458.sjeng      | 8      | 995         | 97.3        | <b>997</b> | <b>97.1</b> | 997         | 97.1        | 8      | 892        | 109         | 889         | 109         | <b>891</b> | <b>109</b>  |
| 462.libquantum | 8      | 3088        | 53.7        | 3087       | 53.7        | <b>3087</b> | <b>53.7</b> | 1      | 281        | 73.8        | <b>285</b>  | <b>72.7</b> | 301        | 68.8        |
| 464.h264ref    | 8      | 1053        | 168         | 1055       | 168         | <b>1055</b> | <b>168</b>  | 8      | 1011       | 175         | <b>1010</b> | <b>175</b>  | 1009       | 175         |
| 471.omnetpp    | 8      | 748         | 66.9        | 759        | 65.9        | <b>749</b>  | <b>66.7</b> | 8      | 703        | 71.1        | 701         | 71.3        | <b>702</b> | <b>71.2</b> |
| 473.astar      | 8      | 875         | 64.2        | 873        | 64.3        | <b>874</b>  | <b>64.3</b> | 8      | <b>808</b> | <b>69.5</b> | 808         | 69.5        | 813        | 69.1        |
| 483.xalancbmk  | 8      | 526         | 105         | <b>526</b> | <b>105</b>  | 526         | 105         | 8      | 526        | 105         | <b>526</b>  | <b>105</b>  | 526        | 105         |

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:  
Adjacent Cache Line Prefetch = Disabled (default Enabled)  
Hardware Prefetcher = Disabled (default Enabled)

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc



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## Base Portability Flags

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

## Base Optimization Flags

C benchmarks:  
-fast -inline-calloc -opt-malloc-options=3

C++ benchmarks:  
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/spec/users/rahul/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: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc  
-L/opt/intel/cce/10.1.008/lib  
-I/opt/intel/cce/10.1.008/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

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## Peak Portability Flags (Continued)

483.xalanbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias  
-prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

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

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -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) -fast -unroll2  
-ansi-alias

C++ benchmarks:

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

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

483.xalanbmk: basepeak = yes



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## 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-ic10.1-INT-ia32-linux-flags.20090713.03.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-INT-ia32-linux-flags.20090713.03.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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