



# SPEC® CINT2006 Result

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## IBM Corporation

### SPECint®\_rate2006 = 83.2

### IBM System x3250 M2 (Intel Xeon X3370)

### SPECint\_rate\_base2006 = 76.5

CPU2006 license: 11

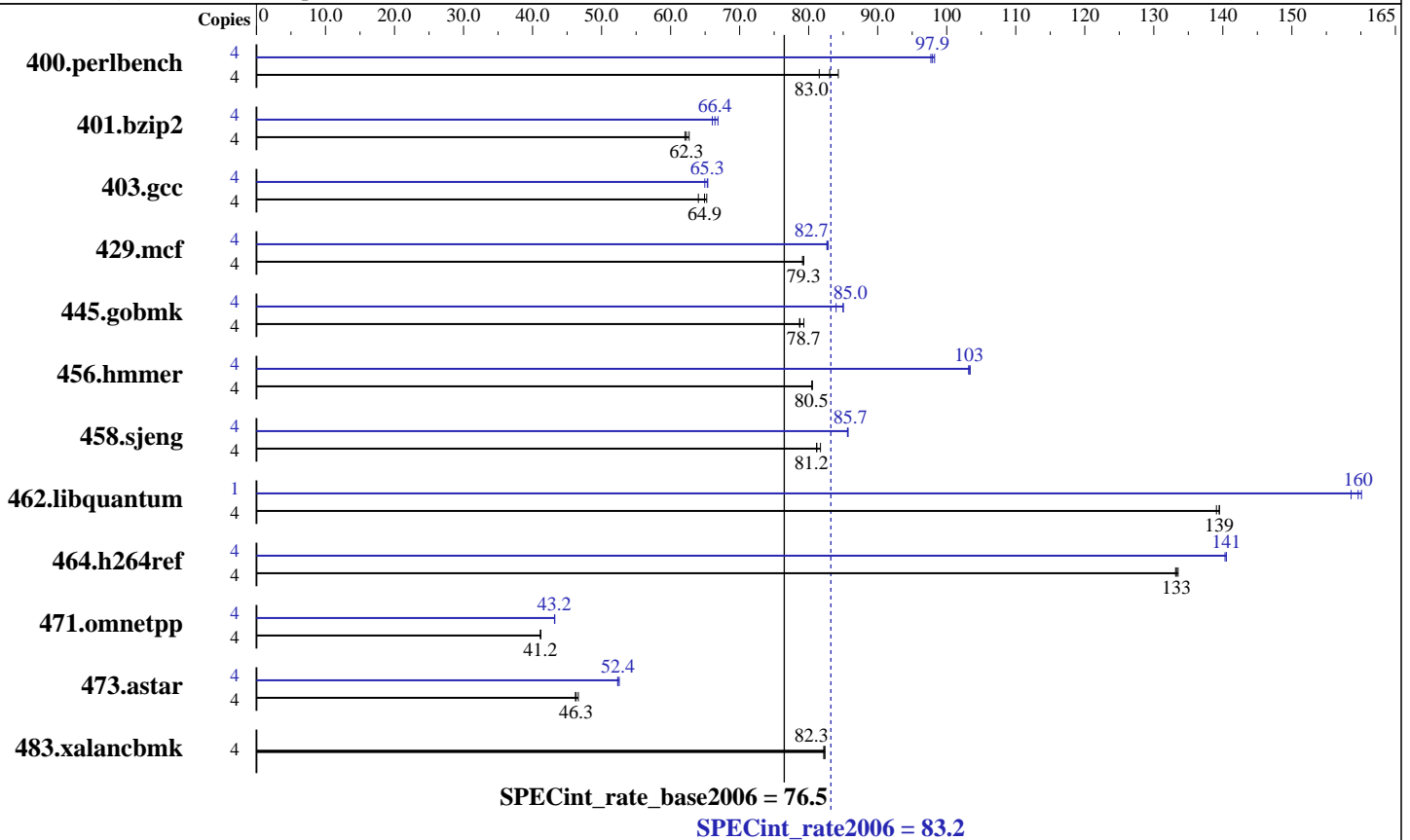
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Apr-2009

Hardware Availability: Jun-2009

Software Availability: Nov-2008



#### Hardware

CPU Name: Intel Xeon X3370  
 CPU Characteristics: 1333 MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 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: 8 GB (4 x 2 GB PC2-6400E ECC)  
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM  
 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 Professional 11.0 for Linux Build 20080930 Package ID: l\_cproc\_p\_11.0.066  
 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	4	479	81.5	464	84.3	<u>471</u>	<u>83.0</u>	4	<u>399</u>	<u>97.9</u>	398	98.2	400	97.7
401.bzip2	4	616	62.7	<u>620</u>	<u>62.3</u>	622	62.1	4	577	66.9	584	66.0	<u>581</u>	<u>66.4</u>
403.gcc	4	503	64.0	494	65.2	<u>496</u>	<u>64.9</u>	4	492	65.4	496	64.9	<u>493</u>	<u>65.3</u>
429.mcf	4	<u>460</u>	<u>79.3</u>	461	79.1	460	79.3	4	<u>441</u>	<u>82.7</u>	440	82.8	441	82.6
445.gobmk	4	533	78.7	<u>533</u>	<u>78.7</u>	529	79.3	4	<u>494</u>	<u>85.0</u>	493	85.0	500	84.0
456.hammer	4	463	80.5	464	80.5	<u>464</u>	<u>80.5</u>	4	362	103	<u>361</u>	<u>103</u>	361	103
458.sjeng	4	<u>596</u>	<u>81.2</u>	596	81.2	592	81.7	4	<u>565</u>	<u>85.7</u>	565	85.7	565	85.6
462.libquantum	4	<u>594</u>	<u>139</u>	594	140	596	139	1	131	159	129	160	<u>130</u>	<u>160</u>
464.h264ref	4	663	134	665	133	<u>664</u>	<u>133</u>	4	631	140	<u>630</u>	<u>141</u>	630	141
471.omnetpp	4	608	41.1	<u>607</u>	<u>41.2</u>	607	41.2	4	<u>579</u>	<u>43.2</u>	578	43.2	579	43.2
473.astar	4	602	46.6	<u>606</u>	<u>46.3</u>	608	46.2	4	534	52.6	537	52.3	<u>536</u>	<u>52.4</u>
483.xalancbmk	4	336	82.2	335	82.4	<u>335</u>	<u>82.3</u>	4	336	82.2	335	82.4	<u>335</u>	<u>82.3</u>

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.  
taskset was used to bind processes to cores except for 462.libquantum peak

## General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run  
OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 64M  
Adjacent Sector Prefetch Disabled

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LINUX\_IA32

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## Base Portability Flags (Continued)

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/11.0/066/bin/intel64/icc

456.hmmer: /opt/intel/Compiler/11.0/066/bin/intel64/icc

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



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## 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.hmmer: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2  
-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 -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 -lsmarheap

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 -lsmarheap

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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

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

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

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

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

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