



# SPEC® CINT2006 Result

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## IBM Corporation

### SPECint®\_rate2006 = 43.1

## IBM System x3200 M2 (Intel Xeon E3110)

### SPECint\_rate\_base2006 = 36.7

CPU2006 license: 11

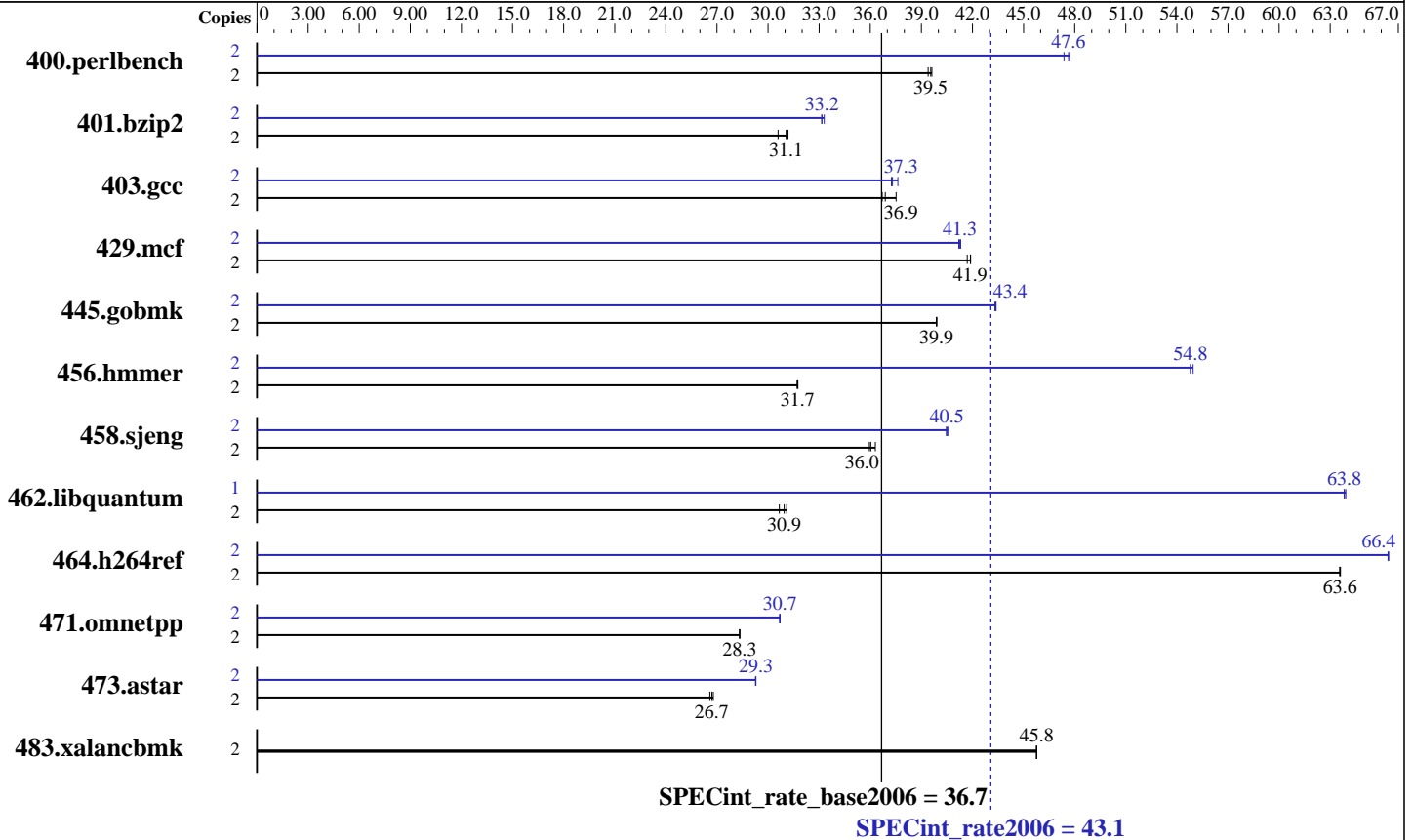
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2008

Hardware Availability: Sep-2008

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E3110  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (4 x 2 GB DDR2-6400E ECC)  
 Disk Subsystem: 1 x 160 GB SATA, 7200RPM  
 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 (Full multiuser with network)  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: MicroQuill SmartHeap 8.1 Binutils 2.17.50.0.15



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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	2	496	39.4	<b>494</b>	<b>39.5</b>	493	39.6	2	412	47.4	410	47.7	<b>410</b>	<b>47.6</b>
401.bzip2	2	<b>621</b>	<b>31.1</b>	619	31.2	631	30.6	2	<b>582</b>	<b>33.2</b>	582	33.2	580	33.3
403.gcc	2	439	36.7	<b>437</b>	<b>36.9</b>	429	37.5	2	432	37.2	428	37.6	<b>432</b>	<b>37.3</b>
429.mcf	2	<b>436</b>	<b>41.9</b>	435	41.9	437	41.7	2	443	41.2	442	41.3	<b>442</b>	<b>41.3</b>
445.gobmk	2	526	39.9	<b>526</b>	<b>39.9</b>	526	39.9	2	<b>484</b>	<b>43.4</b>	484	43.3	484	43.4
456.hmmmer	2	<b>588</b>	<b>31.7</b>	589	31.7	588	31.8	2	341	54.8	<b>340</b>	<b>54.8</b>	340	55.0
458.sjeng	2	673	35.9	<b>672</b>	<b>36.0</b>	667	36.3	2	598	40.5	<b>598</b>	<b>40.5</b>	597	40.6
462.libquantum	2	<b>1339</b>	<b>30.9</b>	1333	31.1	1352	30.7	1	324	63.9	<b>325</b>	<b>63.8</b>	325	63.8
464.h264ref	2	<b>696</b>	<b>63.6</b>	696	63.6	696	63.6	2	<b>666</b>	<b>66.4</b>	666	66.4	667	66.4
471.omnetpp	2	<b>441</b>	<b>28.3</b>	441	28.3	441	28.3	2	407	30.7	407	30.7	<b>407</b>	<b>30.7</b>
473.astar	2	<b>526</b>	<b>26.7</b>	528	26.6	524	26.8	2	480	29.3	479	29.3	<b>479</b>	<b>29.3</b>
483.xalancbmk	2	302	45.8	<b>302</b>	<b>45.8</b>	302	45.8	2	302	45.8	<b>302</b>	<b>45.8</b>	302	45.8

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

## General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmmer, for peak, are compiled in 64-bit mode  
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Enabled  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to null  
taskset utility used to bind CPU(s) to processes

## 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



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## 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  
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) -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.hmmr: -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.xalancbmk: 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-ic10.1-int-linux64-revC.20090713.html>



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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-int-linux64-revC.20090713.xml>

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

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