



# SPEC<sup>®</sup> CINT2006 Result

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## IBM Corporation

### SPECint<sup>®</sup>\_rate2006 = 73.6

### IBM System x3250 M2 (Intel Xeon X3360)

### SPECint\_rate\_base2006 = 63.7

CPU2006 license: 11

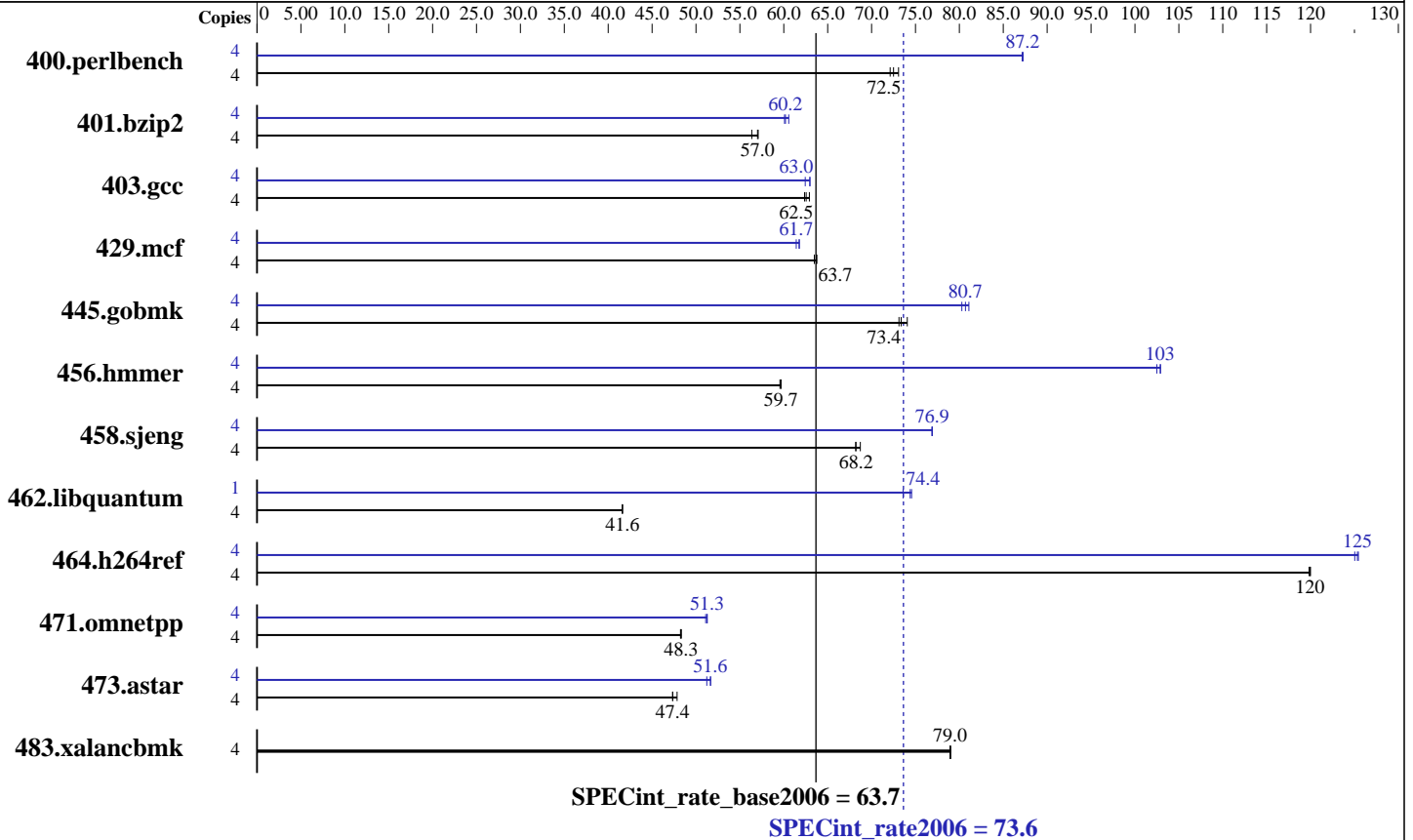
Test date: Jul-2008

Test sponsor: IBM Corporation

Hardware Availability: Sep-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



#### Hardware

CPU Name: Intel Xeon X3360  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 2833  
 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 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	4	542	72.1	535	73.1	<u>539</u>	<u>72.5</u>	4	448	87.1	<u>448</u>	<u>87.2</u>	448	87.2
401.bzip2	4	<u>677</u>	<u>57.0</u>	685	56.4	676	57.1	4	<u>641</u>	<u>60.2</u>	642	60.1	637	60.6
403.gcc	4	<u>515</u>	<u>62.5</u>	516	62.4	512	62.9	4	<u>511</u>	<u>63.0</u>	511	63.0	516	62.4
429.mcf	4	572	63.8	<u>573</u>	<u>63.7</u>	575	63.5	4	591	61.8	<u>591</u>	<u>61.7</u>	594	61.4
445.gobmk	4	574	73.1	567	74.1	<u>572</u>	<u>73.4</u>	4	<u>520</u>	<u>80.7</u>	517	81.1	523	80.3
456.hmmmer	4	<u>625</u>	<u>59.7</u>	627	59.6	625	59.7	4	364	102	363	103	<u>363</u>	<u>103</u>
458.sjeng	4	<u>709</u>	<u>68.2</u>	710	68.2	704	68.7	4	630	76.9	629	76.9	<u>629</u>	<u>76.9</u>
462.libquantum	4	<u>1991</u>	<u>41.6</u>	1992	41.6	1991	41.6	1	278	74.6	<u>279</u>	<u>74.4</u>	282	73.6
464.h264ref	4	<u>738</u>	<u>120</u>	739	120	738	120	4	708	125	<u>706</u>	<u>125</u>	706	125
471.omnetpp	4	518	48.2	517	48.3	<u>518</u>	<u>48.3</u>	4	489	51.1	488	51.3	<u>488</u>	<u>51.3</u>
473.astar	4	587	47.8	<u>593</u>	<u>47.4</u>	593	47.3	4	548	51.2	<u>544</u>	<u>51.6</u>	543	51.7
483.xalancbmk	4	349	79.0	<u>350</u>	<u>79.0</u>	350	78.9	4	349	79.0	<u>350</u>	<u>79.0</u>	350	78.9

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 Disabled and Adjacent Sector Prefetch Disabled  
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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