



# SPEC® CINT2006 Result

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## IBM Corporation

**SPECint®2006 = 23.8**

IBM System x3250 M2 (Intel Core 2 Duo E7400)

**SPECint\_base2006 = 21.4**

CPU2006 license: 11

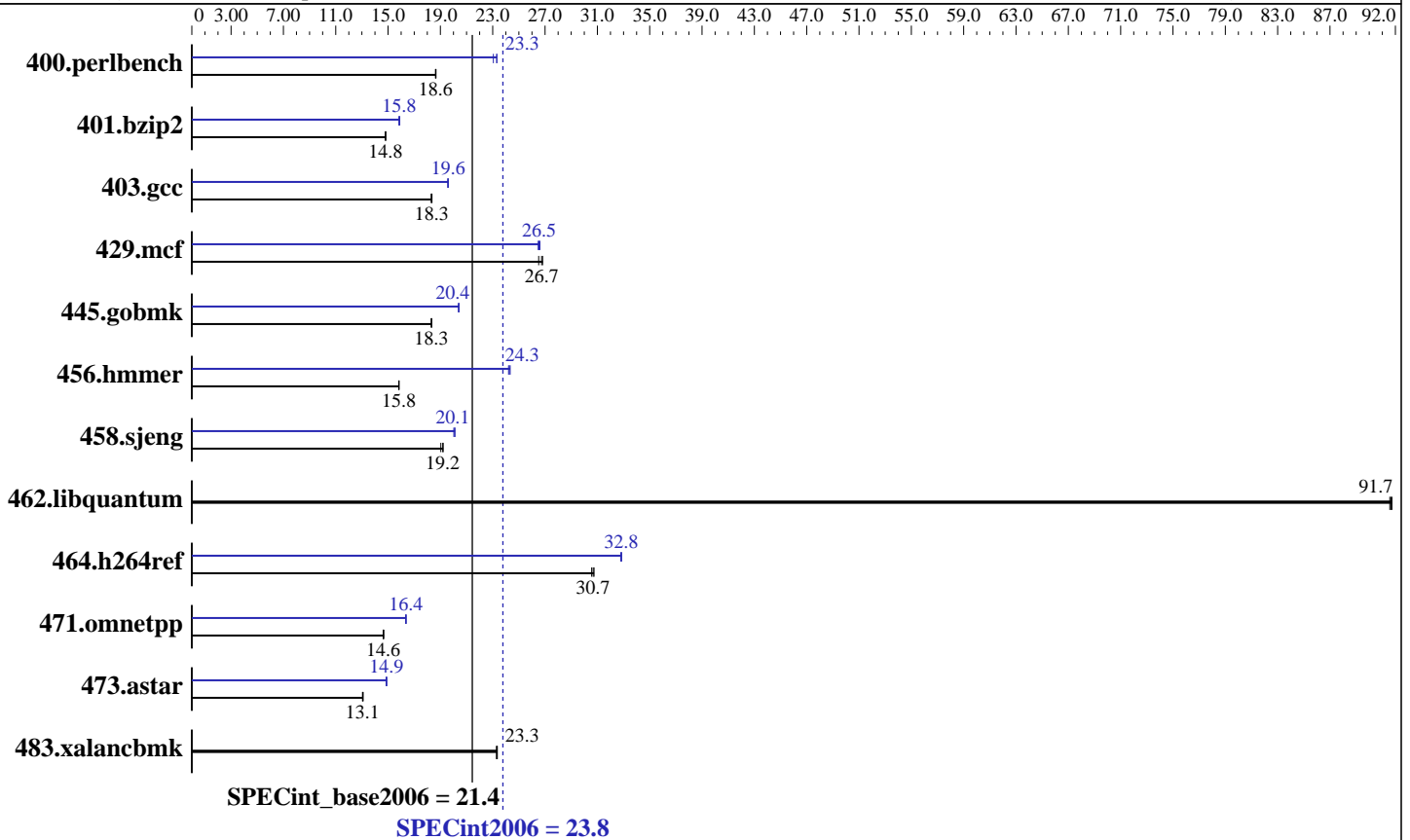
Test date: May-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Core 2 Duo E7400  
 CPU Characteristics: 1067 MHz system bus  
 CPU MHz: 2800  
 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: 3 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 250 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 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<b><u>524</u></b>	<b><u>18.6</u></b>	523	18.7	525	18.6	419	23.3	424	23.0	<b><u>419</u></b>	<b><u>23.3</u></b>
401.bzip2	651	14.8	652	14.8	<b><u>652</u></b>	<b><u>14.8</u></b>	<b><u>609</u></b>	<b><u>15.8</u></b>	609	15.8	607	15.9
403.gcc	439	18.4	<b><u>439</u></b>	<b><u>18.3</u></b>	440	18.3	411	19.6	412	19.6	<b><u>411</u></b>	<b><u>19.6</u></b>
429.mcf	344	26.5	340	26.8	<b><u>341</u></b>	<b><u>26.7</u></b>	344	26.5	<b><u>344</u></b>	<b><u>26.5</u></b>	343	26.6
445.gobmk	572	18.3	573	18.3	<b><u>573</u></b>	<b><u>18.3</u></b>	515	20.4	514	20.4	<b><u>514</u></b>	<b><u>20.4</u></b>
456.hammer	590	15.8	589	15.8	<b><u>589</u></b>	<b><u>15.8</u></b>	<b><u>384</u></b>	<b><u>24.3</u></b>	383	24.3	385	24.2
458.sjeng	636	19.0	630	19.2	<b><u>631</u></b>	<b><u>19.2</u></b>	<b><u>602</u></b>	<b><u>20.1</u></b>	602	20.1	604	20.0
462.libquantum	<b><u>226</u></b>	<b><u>91.7</u></b>	226	91.7	226	91.6	<b><u>226</u></b>	<b><u>91.7</u></b>	226	91.7	226	91.6
464.h264ref	720	30.7	724	30.6	<b><u>721</u></b>	<b><u>30.7</u></b>	675	32.8	<b><u>674</u></b>	<b><u>32.8</u></b>	674	32.8
471.omnetpp	426	14.7	<b><u>427</u></b>	<b><u>14.6</u></b>	427	14.6	382	16.4	382	16.3	<b><u>382</u></b>	<b><u>16.4</u></b>
473.astar	538	13.1	<b><u>538</u></b>	<b><u>13.1</u></b>	536	13.1	471	14.9	<b><u>472</u></b>	<b><u>14.9</u></b>	473	14.9
483.xalancbmk	<b><u>296</u></b>	<b><u>23.3</u></b>	296	23.3	295	23.4	<b><u>296</u></b>	<b><u>23.3</u></b>	296	23.3	295	23.4

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

## General Notes

Hardware Sector Prefetch Enable and Adjacent Sector Prefetch Enable  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to "physical,0"

## 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

## Base Optimization Flags

C benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel  
-par-runtime-control -opt-prefetch

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## Base Optimization Flags (Continued)

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

## 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 -auto-ilp32 -opt-prefetch  
-ansi-alias

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## Peak Optimization Flags (Continued)

403.gcc: -xSSE4.1 -ipo -O3 -no-prec-div -static -inline-alloc  
-opt-malloc-options=3

429.mcf: -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 -auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4

462.libquantum: basepeak = yes

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 -lsmartheap

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 -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-ic11.0-int-linux64-revA.20090902.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.20090902.xml>



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

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