



# SPEC<sup>®</sup> CINT2006 Result

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## IBM Corporation

**SPECint<sup>®</sup>2006 = 12.3**

### IBM BladeCenter HS12 (Intel Celeron 445)

**SPECint\_base2006 = 10.9**

CPU2006 license: 11

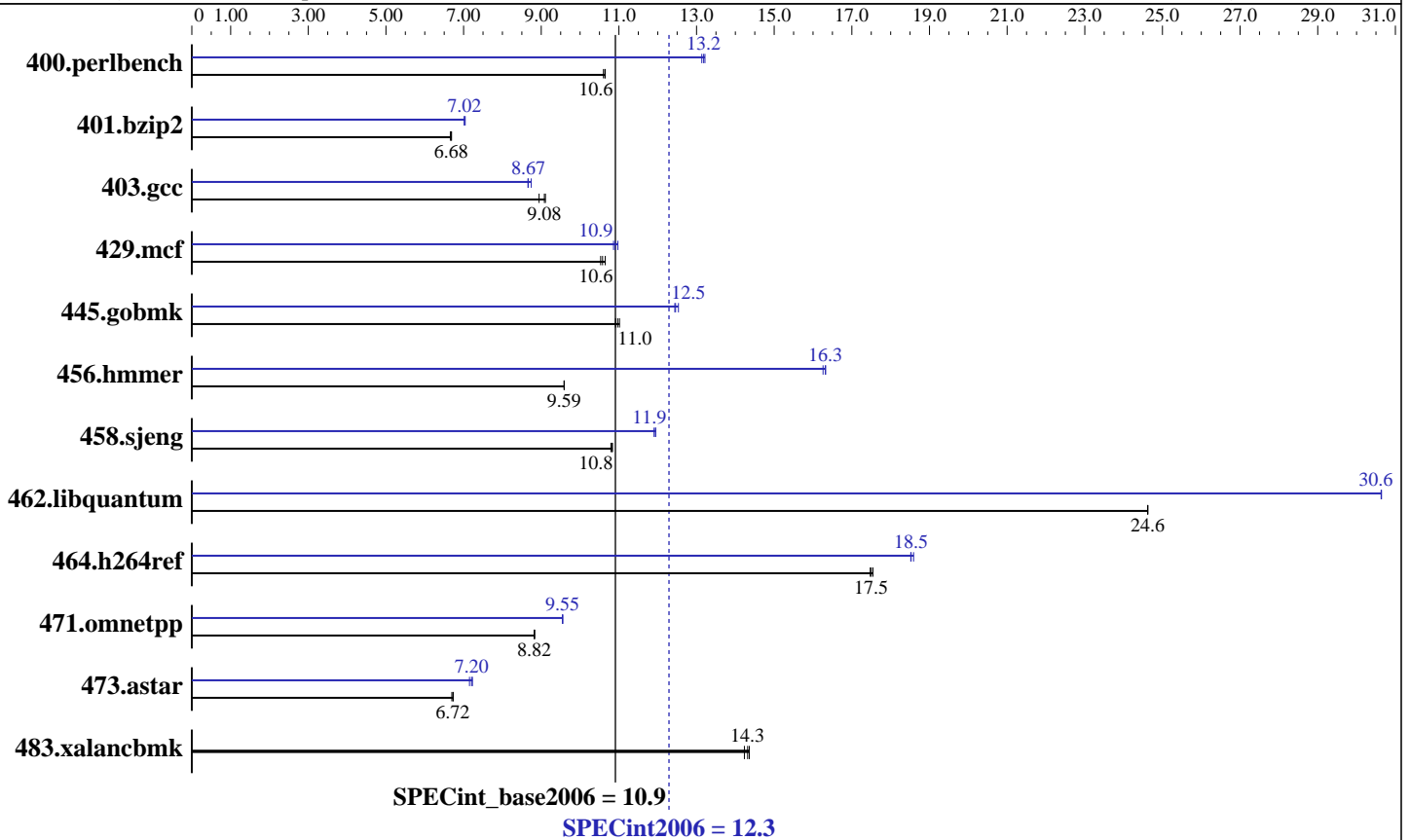
**Test date:** May-2008

**Test sponsor:** IBM Corporation

**Hardware Availability:** May-2008

**Tested by:** IBM Corporation

**Software Availability:** Nov-2007



#### Hardware

CPU Name: Intel Celeron 445  
 CPU Characteristics: 1066MHz system bus  
 CPU MHz: 1866  
 FPU: Integrated  
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per chip  
 Secondary Cache: 512 KB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (4 x 2 GB DDR2-5300 ECC)  
 Disk Subsystem: 1 x 73 GB SAS, 10000 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 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, run level 3  
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	921	10.6	<b>918</b>	<b>10.6</b>	918	10.6	739	13.2	<b>741</b>	<b>13.2</b>	744	13.1
401.bzip2	1449	6.66	1443	6.69	<b>1445</b>	<b>6.68</b>	1371	7.04	1375	7.02	<b>1374</b>	<b>7.02</b>
403.gcc	<b>887</b>	<b>9.08</b>	900	8.94	884	9.11	930	8.66	<b>929</b>	<b>8.67</b>	921	8.74
429.mcf	866	10.5	857	10.6	<b>862</b>	<b>10.6</b>	831	11.0	<b>836</b>	<b>10.9</b>	840	10.9
445.gobmk	952	11.0	961	10.9	<b>956</b>	<b>11.0</b>	837	12.5	<b>842</b>	<b>12.5</b>	843	12.4
456.hmmmer	973	9.59	<b>973</b>	<b>9.59</b>	973	9.59	<b>572</b>	<b>16.3</b>	572	16.3	574	16.3
458.sjeng	1117	10.8	1121	10.8	<b>1119</b>	<b>10.8</b>	1016	11.9	1013	11.9	<b>1013</b>	<b>11.9</b>
462.libquantum	841	24.6	842	24.6	<b>842</b>	<b>24.6</b>	<b>676</b>	<b>30.6</b>	676	30.6	676	30.6
464.h264ref	1261	17.5	<b>1265</b>	<b>17.5</b>	1266	17.5	1190	18.6	1195	18.5	<b>1195</b>	<b>18.5</b>
471.omnetpp	<b>708</b>	<b>8.82</b>	709	8.82	708	8.83	<b>654</b>	<b>9.55</b>	655	9.55	654	9.55
473.astar	1042	6.73	<b>1044</b>	<b>6.72</b>	1048	6.70	982	7.15	971	7.23	<b>974</b>	<b>7.20</b>
483.xalancbmk	<b>482</b>	<b>14.3</b>	481	14.4	485	14.2	<b>482</b>	<b>14.3</b>	481	14.4	485	14.2

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

## 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 -vec-guard-write -parallel -par-runtime-control

C++ benchmarks:

-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs  
-L/spec/users/rahul/cpu2006.1.0/lib -lsmarheap

## 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  
-auto-ilp32

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  
-auto-ilp32

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



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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-ic10.1-int-linux64-revC.20090714.html>

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.20090714.xml>

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

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