



# SPEC® CINT2006 Result

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## IBM Corporation

### SPECint®\_rate2006 = 120

## IBM BladeCenter HS21 (Intel Xeon E5430)

### SPECint\_rate\_base2006 = 98.3

CPU2006 license: 11

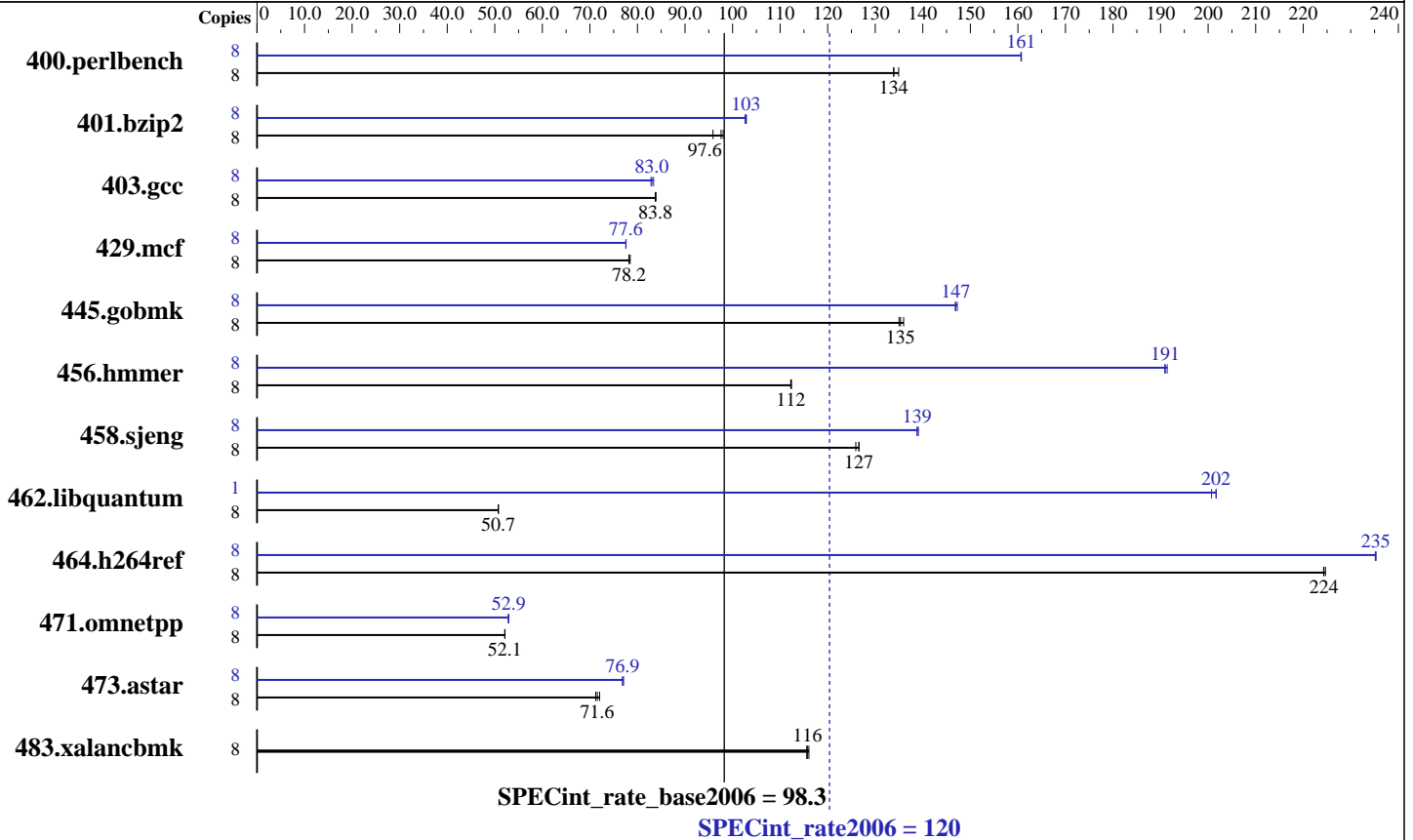
Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5430  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 2666  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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: 16 GB (8 x 2 GB DDR2-5300F ECC)  
 Disk Subsystem: 1 x 36 GB SAS, 10000 RPM  
 Other Hardware: None

### Software

Operating System: SuSE Linux Enterprise Server 10 (x86\_64), Kernel 2.6.16.21-0.8-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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	579	135	<b>584</b>	<b>134</b>	584	134	8	<b>486</b>	<b>161</b>	487	161	486	161
401.bzip2	8	<b>791</b>	<b>97.6</b>	805	95.9	788	98.0	8	750	103	752	103	<b>751</b>	<b>103</b>
403.gcc	8	769	83.7	<b>769</b>	<b>83.8</b>	768	83.9	8	<b>776</b>	<b>83.0</b>	772	83.4	777	82.8
429.mcf	8	930	78.5	933	78.2	<b>933</b>	<b>78.2</b>	8	940	77.6	<b>940</b>	<b>77.6</b>	941	77.5
445.gobmk	8	<b>620</b>	<b>135</b>	622	135	617	136	8	572	147	570	147	<b>571</b>	<b>147</b>
456.hmmmer	8	<b>665</b>	<b>112</b>	664	112	665	112	8	390	191	<b>391</b>	<b>191</b>	391	191
458.sjeng	8	769	126	765	127	<b>765</b>	<b>127</b>	8	<b>697</b>	<b>139</b>	696	139	697	139
462.libquantum	8	3267	50.7	<b>3267</b>	<b>50.7</b>	3267	50.7	1	103	201	<b>103</b>	<b>202</b>	103	202
464.h264ref	8	<b>789</b>	<b>224</b>	789	224	788	225	8	752	235	753	235	<b>752</b>	<b>235</b>
471.omnetpp	8	960	52.1	959	52.1	<b>959</b>	<b>52.1</b>	8	945	52.9	946	52.8	<b>945</b>	<b>52.9</b>
473.astar	8	779	72.0	<b>785</b>	<b>71.6</b>	789	71.2	8	<b>730</b>	<b>76.9</b>	731	76.9	729	77.1
483.xalancbmk	8	476	116	478	116	<b>477</b>	<b>116</b>	8	476	116	478	116	<b>477</b>	<b>116</b>

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 Disabled  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 64M  
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.hmmer: -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-ia32-intel64-linux-flags.20090714.13.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-ia32-intel64-linux-flags.20090714.13.xml>

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

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