



# SPEC® CINT2006 Result

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## IBM Corporation

### SPECint®\_rate2006 = 76.2

### IBM BladeCenter HS21 (Intel Xeon L5240)

### SPECint\_rate\_base2006 = 65.0

CPU2006 license: 11

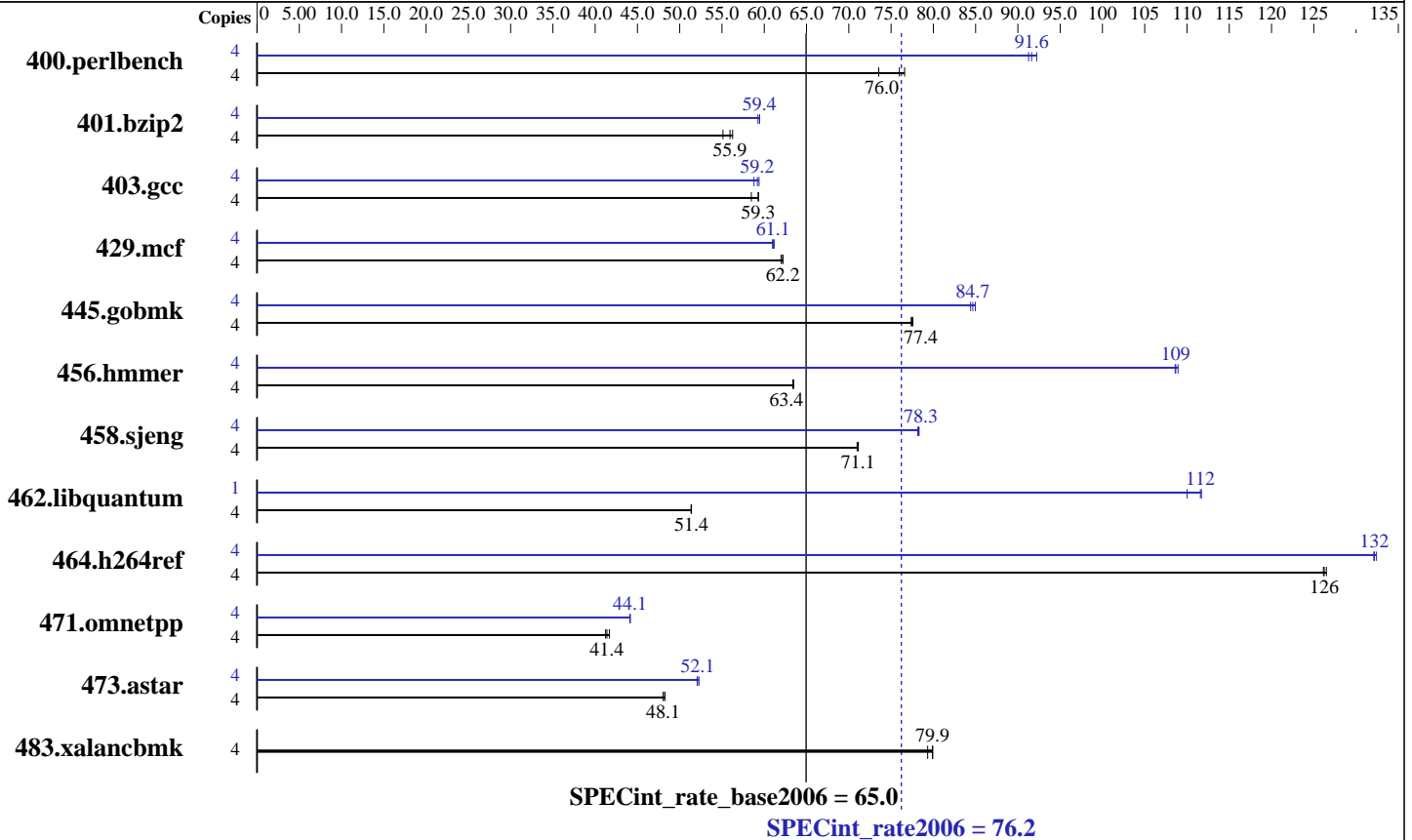
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2008

Hardware Availability: May-2008

Software Availability: Nov-2007



#### Hardware

CPU Name: Intel Xeon L5240  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 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: 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	4	531	73.5	510	76.6	<b>514</b>	<b>76.0</b>	4	<b>427</b>	<b>91.6</b>	428	91.3	424	92.2
401.bzip2	4	686	56.3	<b>690</b>	<b>55.9</b>	700	55.1	4	<b>649</b>	<b>59.4</b>	651	59.3	649	59.5
403.gcc	4	551	58.5	<b>543</b>	<b>59.3</b>	543	59.3	4	542	59.4	548	58.8	<b>544</b>	<b>59.2</b>
429.mcf	4	<b>587</b>	<b>62.2</b>	587	62.2	588	62.0	4	<b>597</b>	<b>61.1</b>	596	61.2	598	61.0
445.gobmk	4	542	77.4	<b>542</b>	<b>77.4</b>	541	77.6	4	494	85.0	497	84.4	<b>496</b>	<b>84.7</b>
456.hmmmer	4	589	63.4	<b>589</b>	<b>63.4</b>	588	63.5	4	344	109	343	109	<b>343</b>	<b>109</b>
458.sjeng	4	682	71.0	<b>681</b>	<b>71.1</b>	681	71.1	4	619	78.2	618	78.3	<b>618</b>	<b>78.3</b>
462.libquantum	4	1613	51.4	<b>1613</b>	<b>51.4</b>	1614	51.3	1	185	112	188	110	<b>186</b>	<b>112</b>
464.h264ref	4	702	126	700	126	<b>701</b>	<b>126</b>	4	670	132	668	132	<b>670</b>	<b>132</b>
471.omnetpp	4	<b>604</b>	<b>41.4</b>	600	41.7	606	41.2	4	567	44.1	<b>567</b>	<b>44.1</b>	566	44.1
473.astar	4	584	48.0	582	48.3	<b>584</b>	<b>48.1</b>	4	539	52.1	<b>539</b>	<b>52.1</b>	537	52.3
483.xalancbmk	4	<b>345</b>	<b>79.9</b>	348	79.3	345	79.9	4	<b>345</b>	<b>79.9</b>	348	79.3	345	79.9

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 Enabled and Adjacent Sector Prefetch Enabled  
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-ic10.1-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).

Tested with SPEC CPU2006 v1.0.  
Report generated on Tue Jul 22 16:59:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 27 May 2008.