



SPEC[®] CINT2006 Result

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IBM Corporation

SPECint[®]2006 = 14.5

IBM BladeCenter HS21 (Intel Xeon E5310)

SPECint_base2006 = 12.4

CPU2006 license: 11

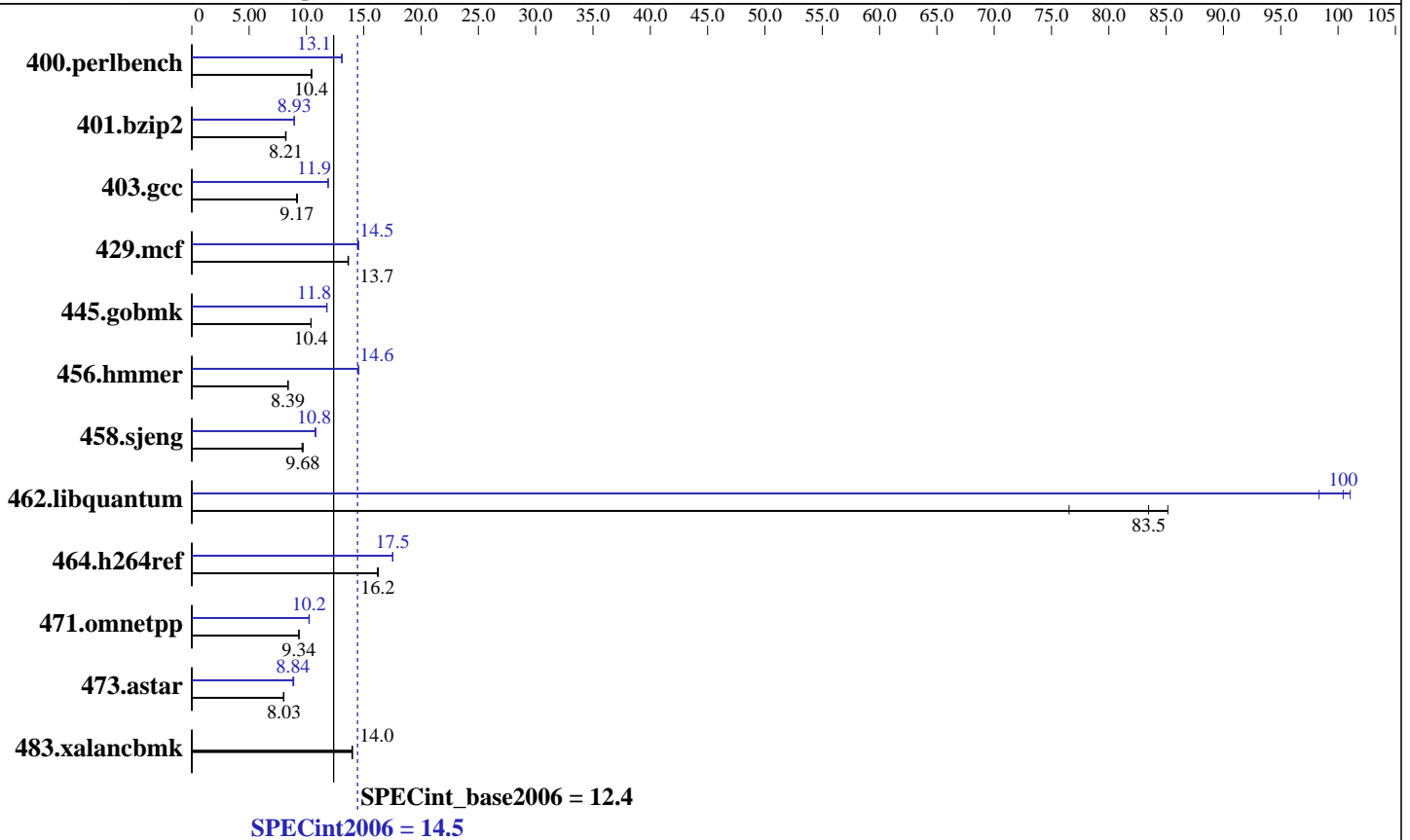
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2008

Hardware Availability: Feb-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5310
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 1600
 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: 8 MB I+D on chip per chip, 4 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<u>936</u>	<u>10.4</u>	937	10.4	934	10.5	<u>747</u>	<u>13.1</u>	746	13.1	747	13.1
401.bzip2	1180	8.18	<u>1176</u>	<u>8.21</u>	1175	8.22	1082	8.92	<u>1080</u>	<u>8.93</u>	1078	8.95
403.gcc	874	9.21	880	9.15	<u>878</u>	<u>9.17</u>	677	11.9	677	11.9	<u>677</u>	<u>11.9</u>
429.mcf	<u>668</u>	<u>13.7</u>	668	13.7	669	13.6	630	14.5	626	14.6	<u>629</u>	<u>14.5</u>
445.gobmk	<u>1009</u>	<u>10.4</u>	1009	10.4	1009	10.4	<u>891</u>	<u>11.8</u>	891	11.8	890	11.8
456.hmmmer	1112	8.39	1111	8.40	<u>1111</u>	<u>8.39</u>	640	14.6	<u>641</u>	<u>14.6</u>	642	14.5
458.sjeng	1247	9.70	1259	9.61	<u>1250</u>	<u>9.68</u>	<u>1121</u>	<u>10.8</u>	1124	10.8	1120	10.8
462.libquantum	271	76.5	243	85.1	<u>248</u>	<u>83.5</u>	<u>206</u>	<u>100</u>	205	101	211	98.3
464.h264ref	1360	16.3	1367	16.2	<u>1363</u>	<u>16.2</u>	1264	17.5	1262	17.5	<u>1262</u>	<u>17.5</u>
471.omnetpp	668	9.35	669	9.34	<u>669</u>	<u>9.34</u>	611	10.2	<u>611</u>	<u>10.2</u>	610	10.3
473.astar	879	7.99	874	8.03	<u>874</u>	<u>8.03</u>	<u>794</u>	<u>8.84</u>	795	8.83	790	8.89
483.xalancbmk	<u>493</u>	<u>14.0</u>	493	14.0	494	14.0	<u>493</u>	<u>14.0</u>	493	14.0	494	14.0

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-ia32-linux-flags.20090714.06.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-INT-ia32-linux-flags.20090714.06.xml>

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For other inquiries, please contact webmaster@spec.org.

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