



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 10.8

IBM BladeCenter LS21 (AMD Opteron 2212)

SPECint_base2006 = 9.77

CPU2006 license: 11

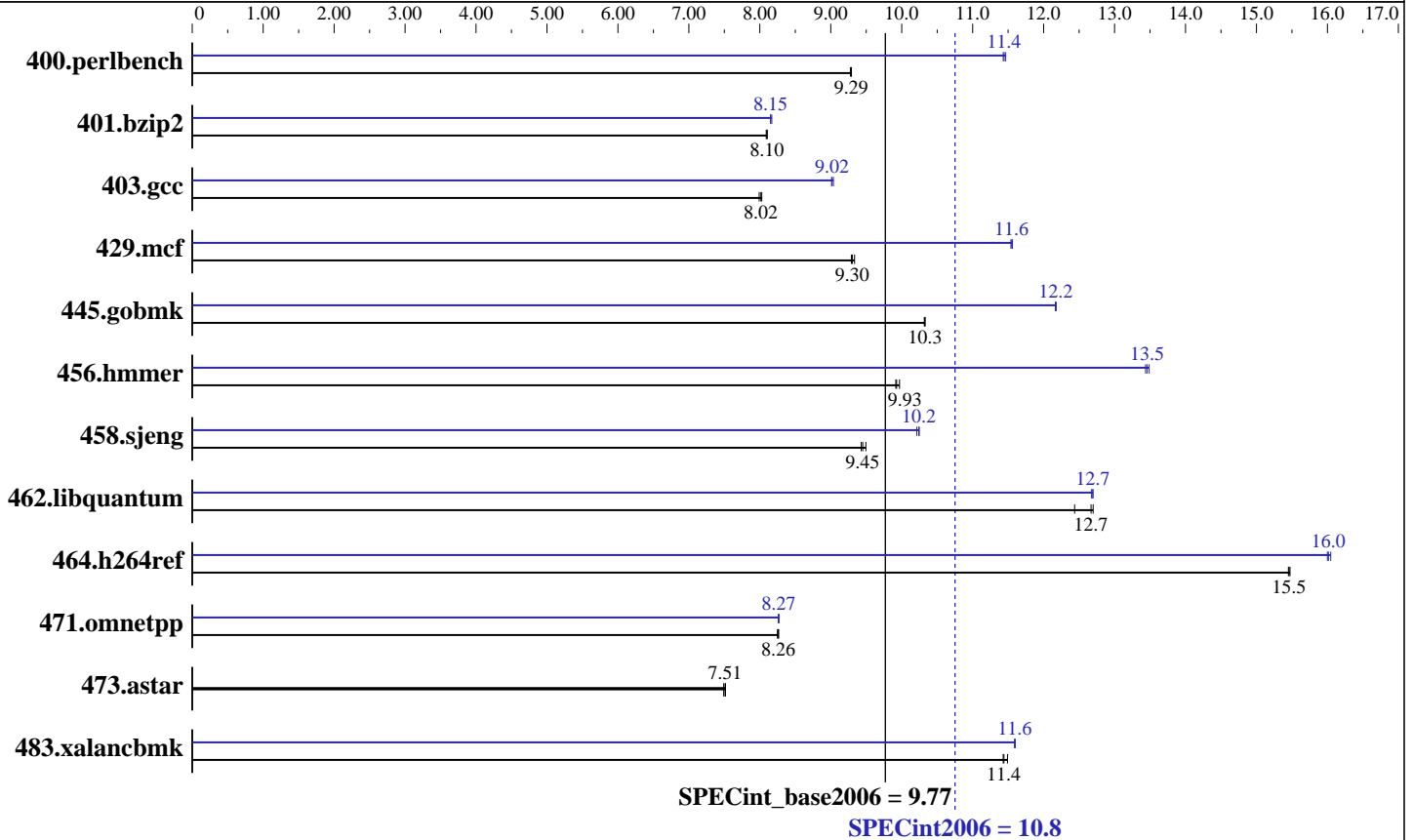
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Aug-2007

Hardware Availability: Oct-2006

Software Availability: Mar-2007



Hardware

CPU Name: AMD Opteron 2212
 CPU Characteristics:
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1, 2 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: None
 Other Cache: None
 Memory: 16 GB (8 x 2GB DDR2-5300 ECC)
 Disk Subsystem: 1 x 36 GB SAS, 10000 RPM
 Other Hardware: None

Software

Operating System: SLES 10 (x86_64), 2.6.16.21-0.8-smp
 Compiler: QLogic PathScale Compiler Suite, Release 3.0
 Auto Parallel: No
 File System: ext3
 System State: Multi-user, run level 3
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap 8.1



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Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	<u>1052</u>	<u>9.29</u>	1051	9.29	1053	9.28	852	11.5	<u>854</u>	<u>11.4</u>	855	11.4
401.bzip2	1191	8.10	<u>1191</u>	<u>8.10</u>	1193	8.09	1181	8.17	<u>1184</u>	<u>8.15</u>	1184	8.15
403.gcc	1003	8.03	<u>1004</u>	<u>8.02</u>	1007	7.99	893	9.01	891	9.04	<u>893</u>	<u>9.02</u>
429.mcf	977	9.34	<u>980</u>	<u>9.30</u>	982	9.29	790	11.5	789	11.6	<u>790</u>	<u>11.6</u>
445.gobmk	<u>1016</u>	<u>10.3</u>	1016	10.3	1017	10.3	862	12.2	<u>862</u>	<u>12.2</u>	861	12.2
456.hmmmer	<u>940</u>	<u>9.93</u>	936	9.97	941	9.92	692	13.5	694	13.4	<u>693</u>	<u>13.5</u>
458.sjeng	1274	9.49	1283	9.43	<u>1280</u>	<u>9.45</u>	<u>1181</u>	<u>10.2</u>	1181	10.2	1185	10.2
462.libquantum	1666	12.4	1632	12.7	<u>1636</u>	<u>12.7</u>	1632	12.7	<u>1632</u>	<u>12.7</u>	1635	12.7
464.h264ref	1432	15.5	1430	15.5	<u>1431</u>	<u>15.5</u>	1383	16.0	1379	16.0	<u>1382</u>	<u>16.0</u>
471.omnetpp	756	8.27	<u>757</u>	<u>8.26</u>	758	8.25	<u>756</u>	<u>8.27</u>	756	8.27	757	8.26
473.astar	934	7.52	<u>935</u>	<u>7.51</u>	937	7.49	934	7.52	<u>935</u>	<u>7.51</u>	937	7.49
483.xalancbmk	600	11.5	<u>603</u>	<u>11.4</u>	604	11.4	595	11.6	<u>595</u>	<u>11.6</u>	595	11.6

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

General Notes

taskset utility used to bind CPU(s) to processes

Base Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Base Portability Flags

```

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

```



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Base Optimization Flags

C benchmarks:

-Ofast -OPT:malloc_alg=1

C++ benchmarks:

-Ofast -m32 -L/tools/SmartHeap_8.1/lib -lsmartheap

Base Other Flags

C benchmarks:

-IPA:max_jobs=2

C++ benchmarks:

-IPA:max_jobs=2

Peak Compiler Invocation

C benchmarks:

pathcc

C++ benchmarks:

pathCC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalanbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-LNO:opt=0

401.bzip2: -O3 -LNO:ou_prod_max=10 -OPT:Ofast -OPT:alias=disjoint

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Peak Optimization Flags (Continued)

403.gcc: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-OPT:Ofast

429.mcf: -m32 -O3 -ipa -L/tools/SmartHeap_8.1/lib -lsmartheap

445.gobmk: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off
-WOPT:retype_expr=on

456.hmmer: -O2 -OPT:alias=disjoint -OPT:malloc_alg=1 -CG:cflow=0

458.sjeng: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-IPA:plimit=50000 -IPA:pu_reorder=2

462.libquantum: -O3 -ipa -CG:local_fwd_sched=on -IPA:space=1000

464.h264ref: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0

C++ benchmarks:

471.omnetpp: -Ofast -CG:gcm=off -m32
-L/tools/SmartHeap_8.1/lib -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -Ofast -m32 -OPT:unroll_times_max=8
-L/tools/SmartHeap_8.1/lib -lsmartheap

Peak Other Flags

C benchmarks:

-IPA:max_jobs=2

C++ benchmarks:

-IPA:max_jobs=2

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.13.html

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.13.xml



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