



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 46.7

IBM System x3655 (AMD Opteron 2216)

SPECint_rate_base2006 = 41.9

CPU2006 license: 11

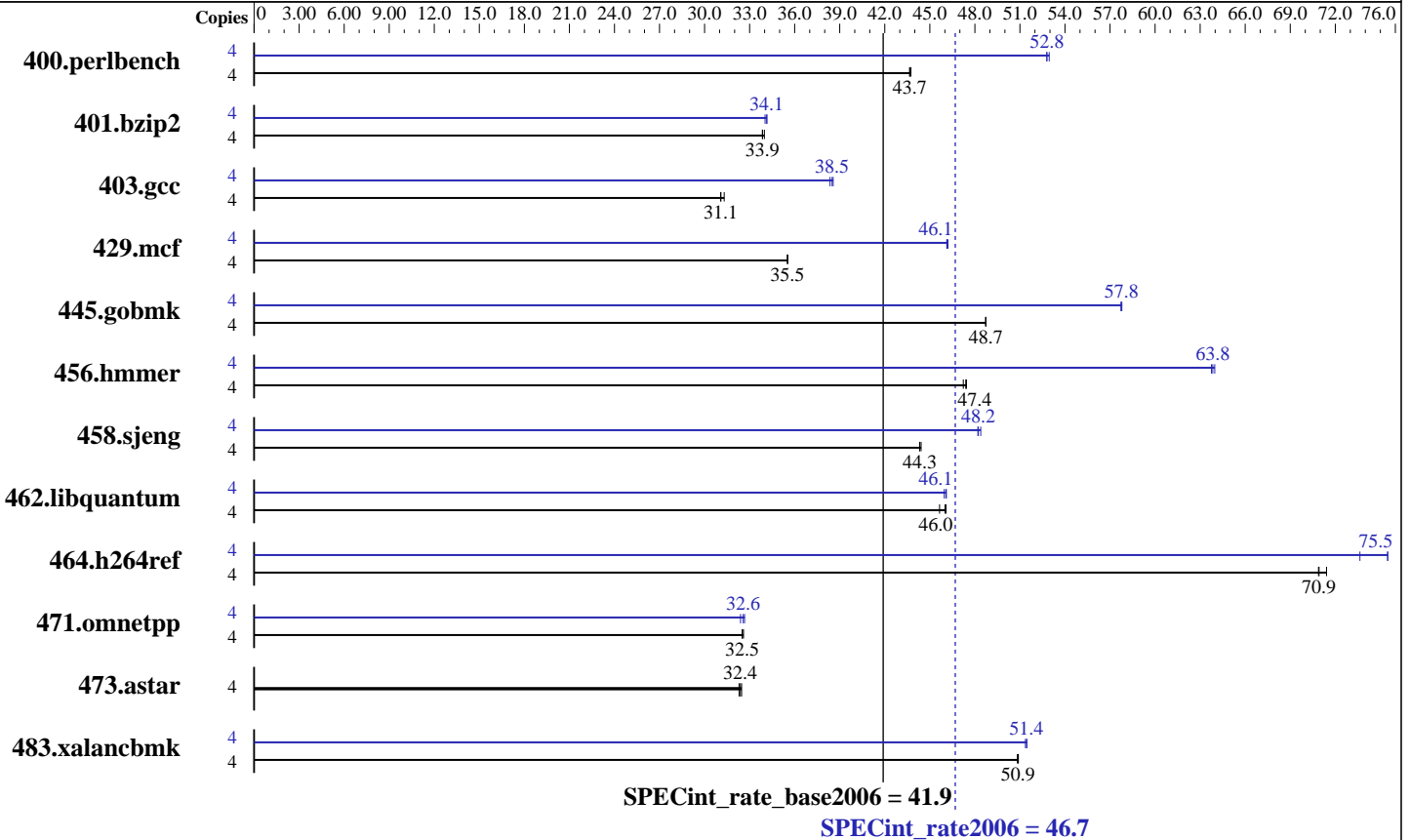
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2007

Hardware Availability: Oct-2006

Software Availability: Mar-2007



Hardware

CPU Name: AMD Opteron 2216
 CPU Characteristics:
 CPU MHz: 2400
 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: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap 8.1



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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	895	43.7	893	43.7	895	43.7	4	740	52.8	738	52.9	740	52.8
401.bzip2	4	1140	33.9	1136	34.0	1140	33.9	4	1130	34.2	1134	34.0	1131	34.1
403.gcc	4	1029	31.3	1036	31.1	1036	31.1	4	837	38.5	835	38.6	840	38.4
429.mcf	4	1027	35.5	1027	35.5	1027	35.5	4	789	46.2	791	46.1	791	46.1
445.gobmk	4	861	48.7	861	48.7	861	48.7	4	727	57.8	727	57.7	726	57.8
456.hammer	4	787	47.4	790	47.2	787	47.4	4	583	64.0	585	63.8	585	63.8
458.sjeng	4	1090	44.4	1092	44.3	1092	44.3	4	1000	48.4	1004	48.2	1004	48.2
462.libquantum	4	1816	45.6	1799	46.1	1801	46.0	4	1798	46.1	1803	46.0	1799	46.1
464.h264ref	4	1249	70.9	1239	71.4	1248	70.9	4	1173	75.5	1173	75.5	1202	73.6
471.omnetpp	4	767	32.6	769	32.5	769	32.5	4	765	32.7	772	32.4	768	32.6
473.astar	4	869	32.3	865	32.5	867	32.4	4	869	32.3	865	32.5	867	32.4
483.xalancbmk	4	542	50.9	543	50.8	543	50.9	4	536	51.4	536	51.5	537	51.4

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.hammer: -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.xalancbmk: -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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