



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 52.4

IBM BladeCenter LS21 (AMD Opteron 2220)

SPECint_rate_base2006 = 47.1

CPU2006 license: 11

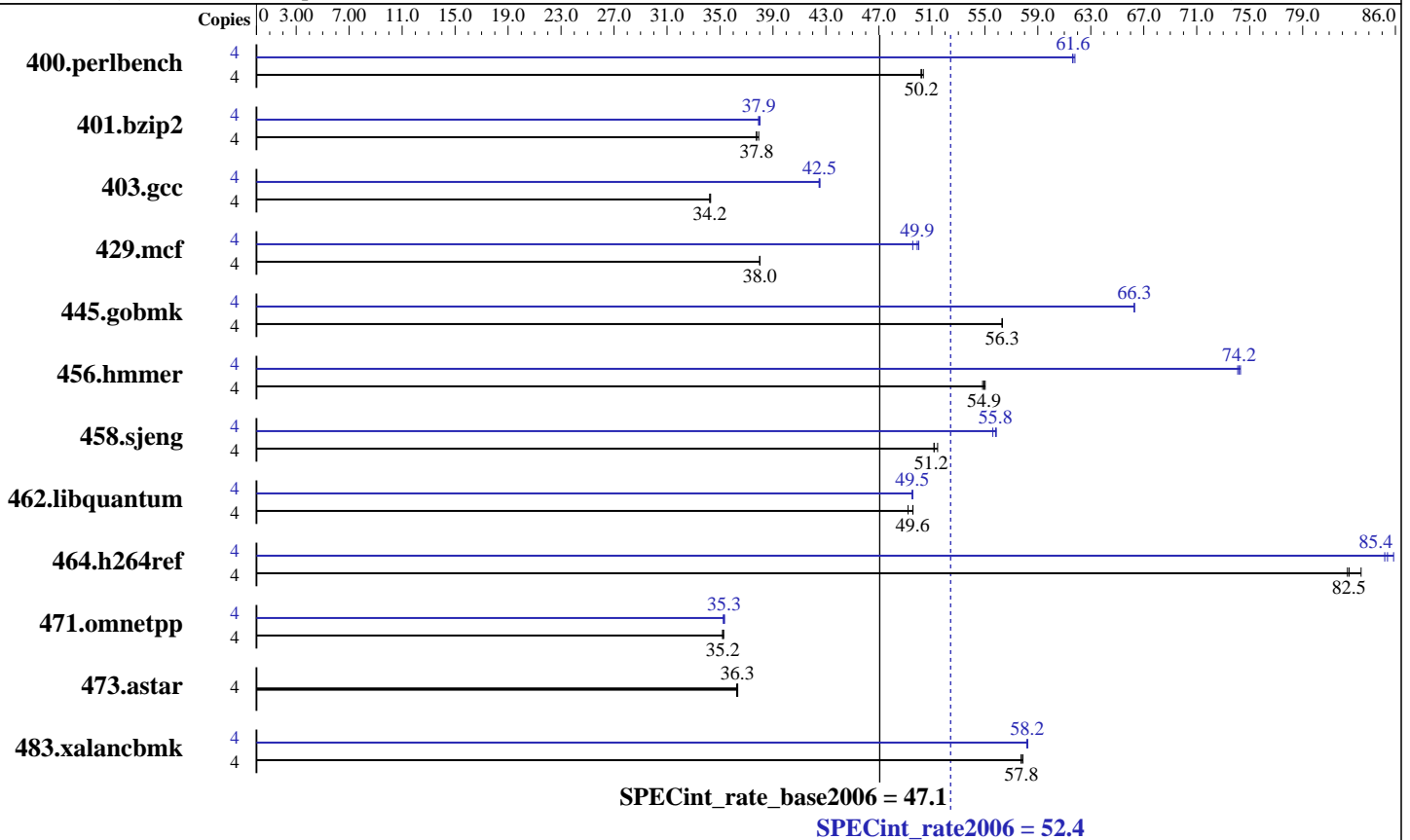
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Mar-2007

Hardware Availability: Feb-2007

Software Availability: Mar-2007



Hardware

CPU Name: AMD Opteron 2220
 CPU Characteristics:
 CPU MHz: 2800
 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	776	50.4	779	50.2	778	50.2	4	632	61.8	634	61.6	634	61.6
401.bzip2	4	1022	37.8	1018	37.9	1022	37.8	4	1018	37.9	1018	37.9	1015	38.0
403.gcc	4	941	34.2	939	34.3	941	34.2	4	758	42.5	757	42.5	757	42.5
429.mcf	4	960	38.0	960	38.0	960	38.0	4	731	49.9	736	49.6	729	50.0
445.gobmk	4	745	56.3	745	56.3	745	56.3	4	633	66.3	633	66.3	633	66.3
456.hammer	4	678	55.0	681	54.8	679	54.9	4	503	74.2	504	74.1	502	74.3
458.sjeng	4	946	51.2	946	51.2	941	51.4	4	870	55.6	867	55.8	866	55.9
462.libquantum	4	1684	49.2	1672	49.6	1672	49.6	4	1672	49.6	1673	49.5	1674	49.5
464.h264ref	4	1075	82.4	1061	83.4	1073	82.5	4	1036	85.4	1031	85.9	1039	85.2
471.omnetpp	4	709	35.3	710	35.2	710	35.2	4	707	35.3	709	35.2	708	35.3
473.astar	4	774	36.3	773	36.3	773	36.3	4	774	36.3	773	36.3	773	36.3
483.xalancbmk	4	477	57.9	478	57.7	478	57.8	4	474	58.2	474	58.2	475	58.2

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 -lsmarheap

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.hmmr: -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 -lsmarheap

473.astar: basepeak = yes

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

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 12:29:55 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 21 August 2007.