SPEC® CINT2006 Result

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IBM Corporation

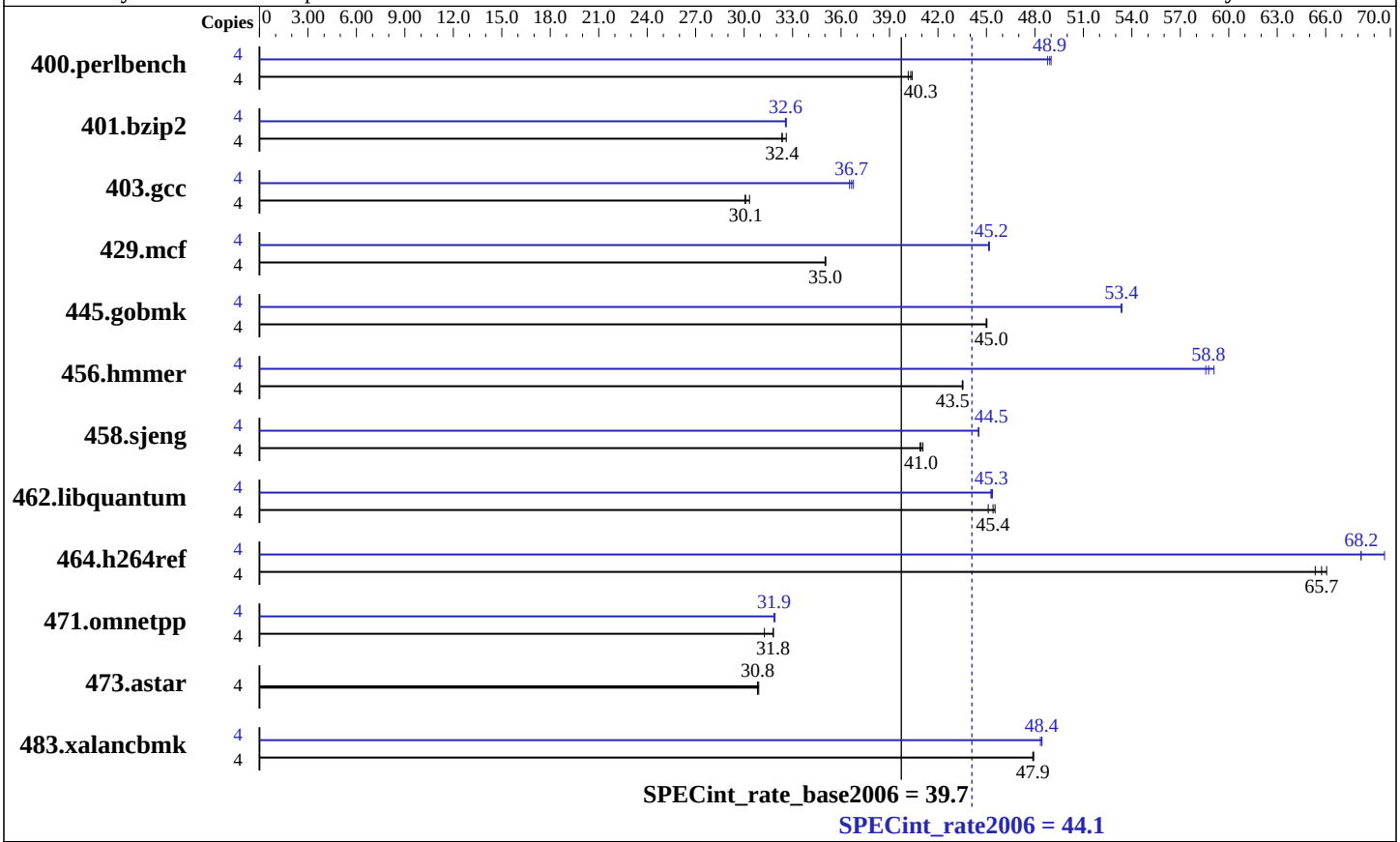
IBM System x3655 (AMD Opteron 2214)

SPECint®_rate2006 = 44.1

SPECint_rate_base2006 = 39.7

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 2214
CPU Characteristics:	
CPU MHz:	2200
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	967	40.4	973	40.2	**969**	**40.3**	4	801	48.8	798	49.0	**799**	**48.9**
401.bzip2	4	1184	32.6	1194	32.3	**1193**	**32.4**	4	1186	32.6	**1185**	**32.6**	1184	32.6
403.gcc	4	1061	30.3	1071	30.1	**1070**	**30.1**	4	**879**	**36.7**	882	36.5	876	36.8
429.mcf	4	1041	35.0	1042	35.0	**1041**	**35.0**	4	808	45.1	807	45.2	**808**	**45.2**
445.gobmk	4	932	45.0	933	45.0	**932**	**45.0**	4	**786**	**53.4**	787	53.3	786	53.4
456.hmmer	4	858	43.5	857	43.5	**858**	**43.5**	4	637	58.6	632	59.1	**635**	**58.8**
458.sjeng	4	1178	41.1	1184	40.9	**1182**	**41.0**	4	**1087**	**44.5**	1087	44.5	1088	44.5
462.libquantum	4	1837	45.1	**1825**	**45.4**	1820	45.5	4	**1829**	**45.3**	1827	45.4	1830	45.3
464.h264ref	4	1355	65.4	1340	66.1	**1346**	**65.7**	4	**1298**	**68.2**	1298	68.2	1271	69.6
471.omnetpp	4	786	31.8	800	31.3	**786**	**31.8**	4	783	31.9	785	31.9	**785**	**31.9**
473.astar	4	909	30.9	**911**	**30.8**	911	30.8	4	909	30.9	**911**	**30.8**	911	30.8
483.xalancbmk	4	576	47.9	577	47.9	**576**	**47.9**	4	**570**	**48.4**	570	48.4	571	48.3

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.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

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`

Continued on next page

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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