SPEC® CINT2006 Result

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IBM Corporation

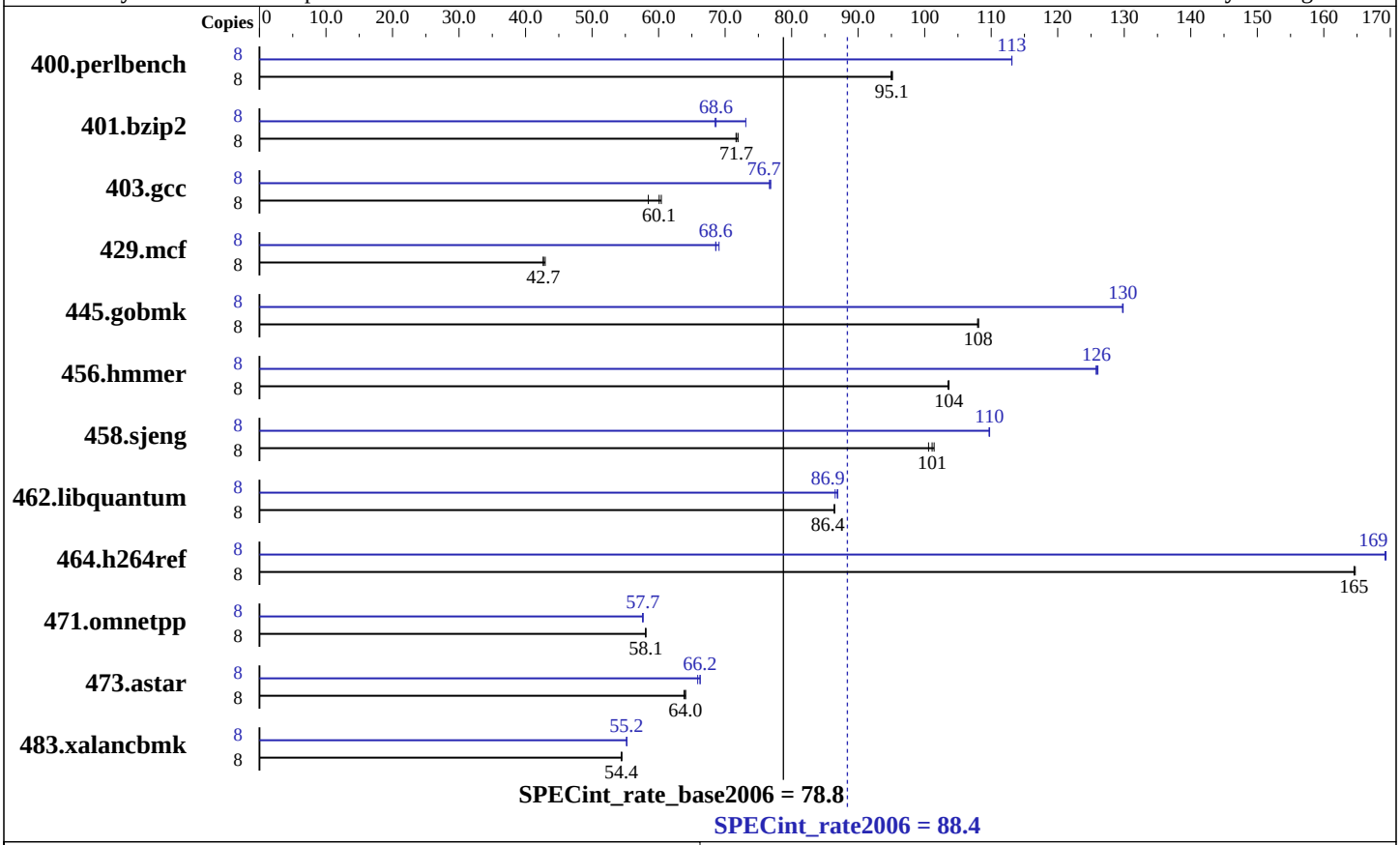
IBM BladeCenter LS41 (AMD Opteron 8220)

SPECint®_rate2006 = 88.4

SPECint_rate_base2006 = 78.8

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Feb-2007
Hardware Availability: Feb-2007
Software Availability: Aug-2006



Hardware

CPU Name:	AMD Opteron 8220
CPU Characteristics:	
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip
CPU(s) orderable:	1, 2, 4 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:	32 GB (16 x 2GB DDR2-5300 ECC)
Disk Subsystem:	1 x 74 GB SAS, 10000 RPM
Other Hardware:	None

Software

Operating System:	SLES9 SP3 for AMD64/EM64T
Compiler:	QLogic PathScale Compiler Suite 2.5
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

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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	8	823	95.0	821	95.2	**822**	**95.1**	8	691	113	**691**	**113**	691	113
401.bzip2	8	1073	71.9	1078	71.6	**1077**	**71.7**	8	1056	73.1	1127	68.5	**1125**	**68.6**
403.gcc	8	1066	60.4	**1072**	**60.1**	1102	58.5	8	838	76.9	840	76.7	**839**	**76.7**
429.mcf	8	1699	43.0	**1710**	**42.7**	1710	42.7	8	1056	69.1	**1063**	**68.6**	1064	68.6
445.gobmk	8	776	108	**777**	**108**	777	108	8	647	130	646	130	**647**	**130**
456.hmmer	8	**720**	**104**	721	104	720	104	8	**593**	**126**	593	126	592	126
458.sjeng	8	962	101	**957**	**101**	954	101	8	**882**	**110**	883	110	882	110
462.libquantum	8	1917	86.4	1918	86.4	**1918**	**86.4**	8	1907	86.9	**1908**	**86.9**	1915	86.5
464.h264ref	8	1075	165	**1076**	**165**	1076	165	8	1046	169	1045	169	**1046**	**169**
471.omnetpp	8	**861**	**58.1**	861	58.0	861	58.1	8	**867**	**57.7**	868	57.6	867	57.7
473.astar	8	880	63.8	**877**	**64.0**	877	64.0	8	**848**	**66.2**	853	65.9	848	66.2
483.xalancbmk	8	1015	54.4	**1014**	**54.4**	1013	54.5	8	**1000**	**55.2**	1000	55.2	999	55.2

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

Operating System 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:
`-march=auto -Ofast`

C++ benchmarks:
`-march=auto -Ofast -m32`

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`
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`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-march=auto -fb_create fbdata`(pass 1)
`-fb_opt fbdata`(pass 2) `-Ofast`

Continued on next page

Peak Optimization Flags (Continued)

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

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

429.mcf: -march=auto -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O2 -ipa

445.gobmk: -march=auto -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: -march=auto -O2 -OPT:alias=disjoint -WOPT:aggstr=0 -CG:cflow=0

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

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

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

C++ benchmarks:

471.omnetpp: -march=auto -Ofast -IPA:pu_reorder=2 -CG:gcm=off -m32

473.astar: -march=auto -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast

483.xalancbmk: -march=auto -Ofast -m32 -OPT:unroll_times_max=8

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.20090714.17.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.17.xml

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