SPEC® CINT2006 Result

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IBM Corporation

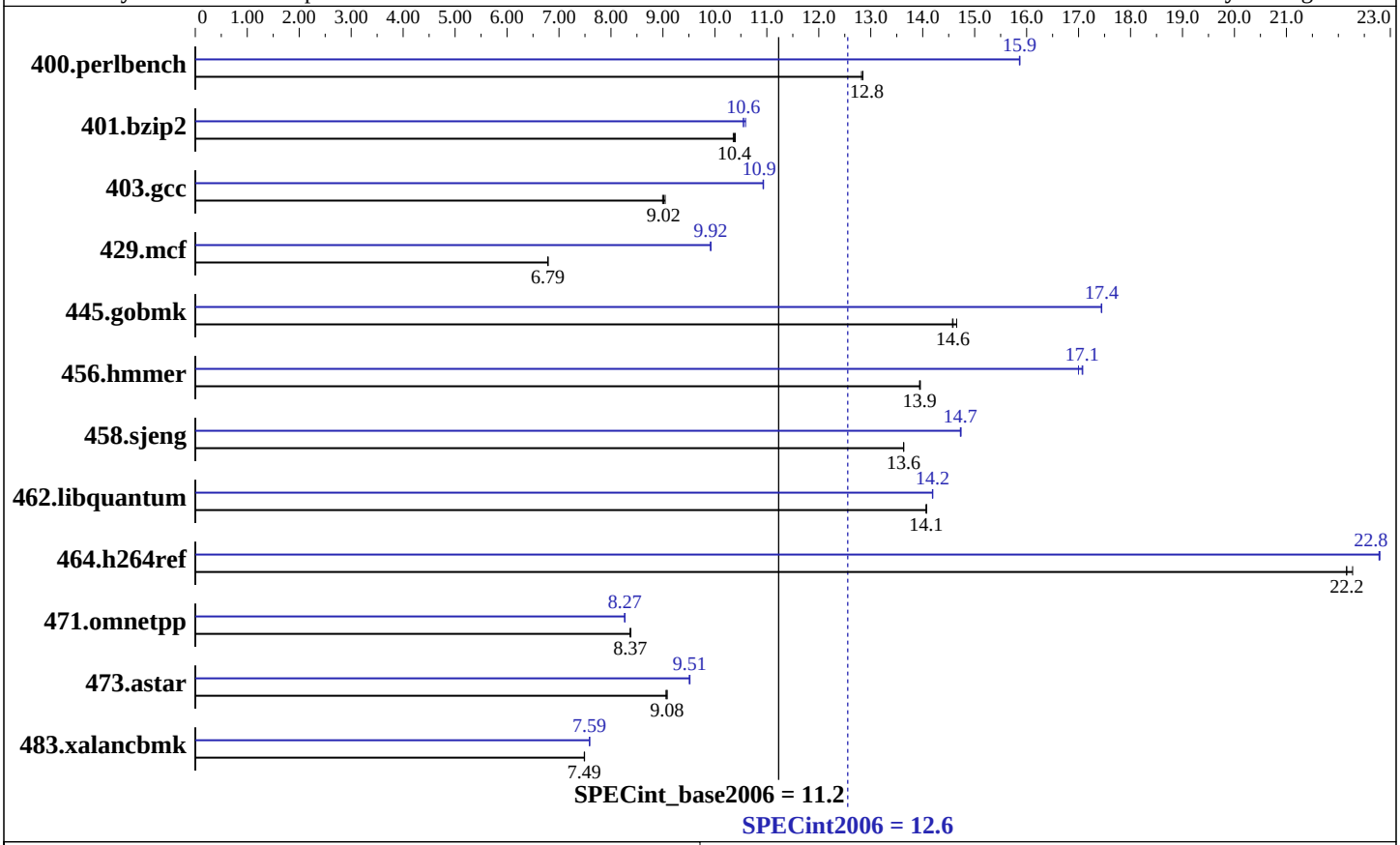
IBM System x3755 (AMD Opteron 8222 SE)

SPECint®2006 = 12.6

SPECint_base2006 = 11.2

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

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



Hardware

CPU Name:	AMD Opteron 8222 SE
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip
CPU(s) orderable:	1, 2, 3, 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 73 GB SATA, 15000 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	**760**	**12.8**	760	12.8	762	12.8	616	15.9	616	15.9	**616**	**15.9**
401.bzip2	932	10.4	**930**	**10.4**	928	10.4	911	10.6	**915**	**10.6**	915	10.5
403.gcc	890	9.04	**893**	**9.02**	895	8.99	736	10.9	737	10.9	**736**	**10.9**
429.mcf	1343	6.79	**1344**	**6.79**	1344	6.79	919	9.92	920	9.92	**919**	**9.92**
445.gobmk	716	14.7	720	14.6	**719**	**14.6**	602	17.4	**601**	**17.4**	601	17.4
456.hmmer	**669**	**13.9**	669	14.0	669	13.9	546	17.1	549	17.0	**547**	**17.1**
458.sjeng	888	13.6	888	13.6	**888**	**13.6**	**822**	**14.7**	822	14.7	821	14.7
462.libquantum	1472	14.1	**1473**	**14.1**	1473	14.1	**1460**	**14.2**	1460	14.2	1461	14.2
464.h264ref	994	22.3	999	22.2	**999**	**22.2**	971	22.8	971	22.8	**971**	**22.8**
471.omnetpp	746	8.38	**747**	**8.37**	747	8.37	756	8.26	**756**	**8.27**	756	8.27
473.astar	775	9.06	773	9.08	**773**	**9.08**	738	9.51	737	9.52	**738**	**9.51**
483.xalancbmk	921	7.49	922	7.49	**921**	**7.49**	909	7.59	910	7.59	**909**	**7.59**

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.20090714.29.html

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.29.xml`

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