SPEC® CINT2006 Result

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IBM Corporation

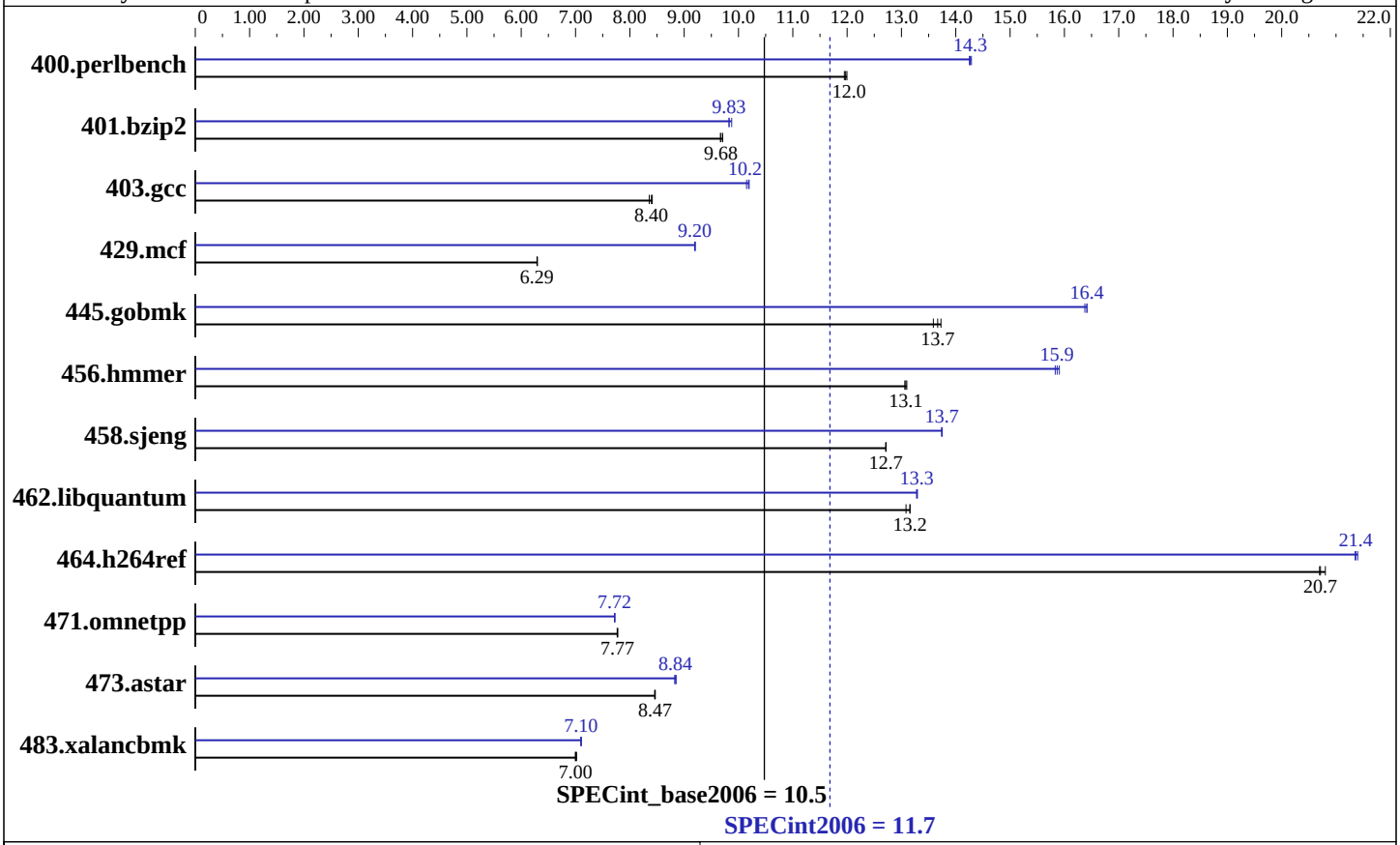
IBM BladeCenter LS41 (AMD Opteron 8220)

SPECint®2006 = 11.7

SPECint_base2006 = 10.5

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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	814	12.0	818	11.9	**816**	**12.0**	**685**	**14.3**	684	14.3	686	14.3
401.bzip2	998	9.67	994	9.71	**997**	**9.68**	977	9.87	982	9.83	**982**	**9.83**
403.gcc	957	8.41	**959**	**8.40**	963	8.36	789	10.2	**791**	**10.2**	793	10.1
429.mcf	1448	6.30	**1450**	**6.29**	1450	6.29	991	9.20	**991**	**9.20**	992	9.19
445.gobmk	764	13.7	**768**	**13.7**	772	13.6	639	16.4	**639**	**16.4**	641	16.4
456.hmmer	**713**	**13.1**	712	13.1	714	13.1	587	15.9	589	15.8	**588**	**15.9**
458.sjeng	952	12.7	952	12.7	**952**	**12.7**	881	13.7	880	13.7	**880**	**13.7**
462.libquantum	1584	13.1	**1575**	**13.2**	1575	13.2	1560	13.3	**1560**	**13.3**	1559	13.3
464.h264ref	**1068**	**20.7**	1064	20.8	1069	20.7	1034	21.4	**1036**	**21.4**	1036	21.4
471.omnetpp	804	7.78	805	7.77	**804**	**7.77**	809	7.73	810	7.72	**809**	**7.72**
473.astar	**829**	**8.47**	829	8.47	830	8.46	795	8.82	**794**	**8.84**	793	8.85
483.xalancbmk	986	7.00	**985**	**7.00**	983	7.02	971	7.11	972	7.10	**971**	**7.10**

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 10:40:32 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 March 2007.