SPEC® CINT2006 Result

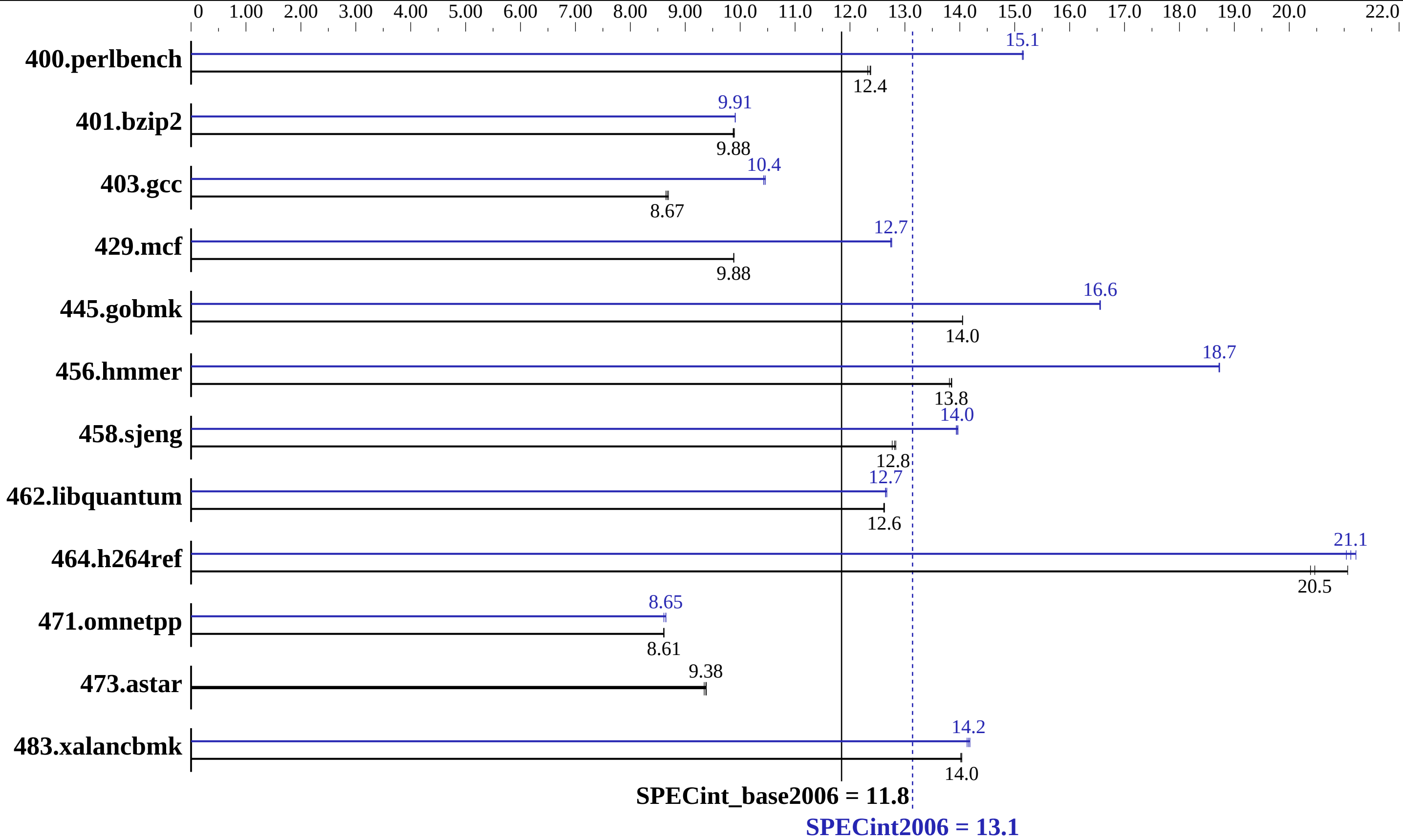
IBM Corporation

IBM System x3755 (AMD Opteron 8220)

SPECint®2006 = 13.1

SPECint_base2006 = 11.8

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation
Test date: Jul-2007
Hardware Availability: Apr-2007
Software Availability: Mar-2007



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, 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 36 GB SAS, 15000 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:	64-bit
Peak Pointers:	32/64-bit
Other Software:	MicroQuill SmartHeap 8.1

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Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	789	12.4	793	12.3	**790**	**12.4**	644	15.2	**645**	**15.1**	645	15.1
401.bzip2	**977**	**9.88**	975	9.90	977	9.87	**974**	**9.91**	974	9.91	974	9.91
403.gcc	926	8.69	**928**	**8.67**	931	8.65	**771**	**10.4**	772	10.4	770	10.5
429.mcf	922	9.89	**923**	**9.88**	923	9.88	**716**	**12.7**	716	12.7	715	12.8
445.gobmk	747	14.0	**747**	**14.0**	747	14.1	**633**	**16.6**	633	16.6	634	16.5
456.hmmer	676	13.8	673	13.9	**674**	**13.8**	498	18.7	**498**	**18.7**	498	18.7
458.sjeng	948	12.8	**944**	**12.8**	943	12.8	**867**	**14.0**	866	14.0	868	13.9
462.libquantum	**1641**	**12.6**	1641	12.6	1643	12.6	**1638**	**12.7**	1635	12.7	1638	12.6
464.h264ref	**1081**	**20.5**	1086	20.4	1051	21.1	1052	21.0	**1048**	**21.1**	1043	21.2
471.omnetpp	**726**	**8.61**	726	8.60	726	8.61	**723**	**8.65**	726	8.61	723	8.65
473.astar	748	9.38	751	9.34	**749**	**9.38**	748	9.38	751	9.34	**749**	**9.38**
483.xalancbmk	492	14.0	**492**	**14.0**	492	14.0	**487**	**14.2**	486	14.2	488	14.1

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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