



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 13.2

IBM BladeCenter LS21 (AMD Opteron 2218)

SPECint_base2006 = 12.0

CPU2006 license: 11

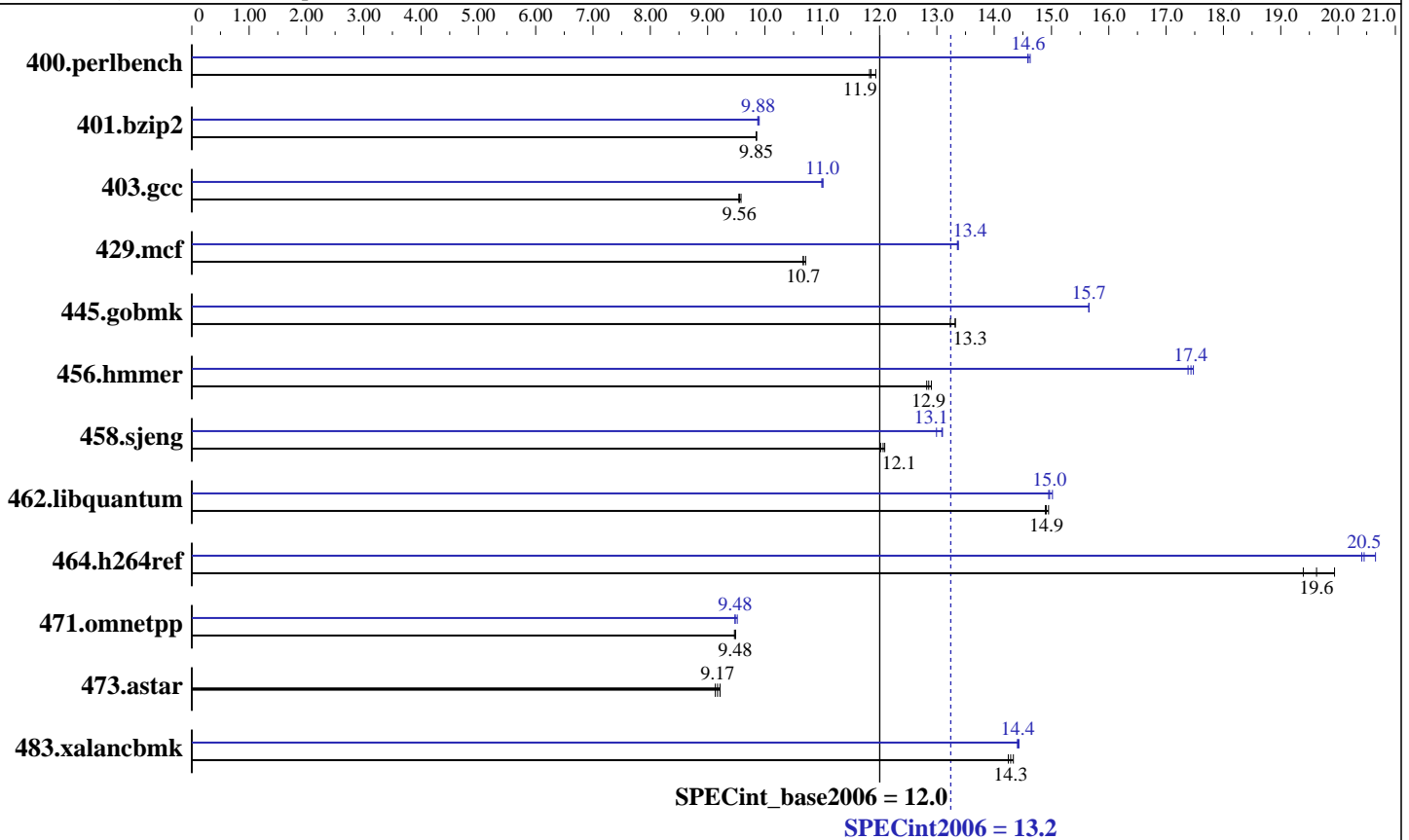
Test date: Aug-2007

Test sponsor: IBM Corporation

Hardware Availability: Oct-2006

Tested by: IBM Corporation

Software Availability: Mar-2007



Hardware

CPU Name: AMD Opteron 2218
 CPU Characteristics:
 CPU MHz: 2600
 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	826	11.8	819	11.9	<u>824</u>	<u>11.9</u>	668	14.6	<u>670</u>	<u>14.6</u>	670	14.6
401.bzip2	980	9.85	979	9.85	<u>980</u>	<u>9.85</u>	975	9.90	977	9.88	<u>976</u>	<u>9.88</u>
403.gcc	<u>842</u>	<u>9.56</u>	840	9.58	843	9.54	731	11.0	<u>731</u>	<u>11.0</u>	732	11.0
429.mcf	<u>855</u>	<u>10.7</u>	852	10.7	855	10.7	682	13.4	683	13.4	<u>682</u>	<u>13.4</u>
445.gobmk	793	13.2	787	13.3	<u>788</u>	<u>13.3</u>	670	15.7	<u>670</u>	<u>15.7</u>	670	15.7
456.hmmmer	<u>726</u>	<u>12.9</u>	728	12.8	723	12.9	<u>535</u>	<u>17.4</u>	534	17.5	537	17.4
458.sjeng	1001	12.1	<u>1003</u>	<u>12.1</u>	1007	12.0	931	13.0	924	13.1	<u>925</u>	<u>13.1</u>
462.libquantum	<u>1390</u>	<u>14.9</u>	1391	14.9	1386	14.9	<u>1384</u>	<u>15.0</u>	1380	15.0	1386	15.0
464.h264ref	1141	19.4	<u>1128</u>	<u>19.6</u>	1110	19.9	1071	20.7	<u>1082</u>	<u>20.5</u>	1084	20.4
471.omnetpp	<u>659</u>	<u>9.48</u>	659	9.49	660	9.47	657	9.52	659	9.48	<u>659</u>	<u>9.48</u>
473.astar	<u>765</u>	<u>9.17</u>	762	9.22	769	9.13	<u>765</u>	<u>9.17</u>	762	9.22	769	9.13
483.xalancbmk	481	14.3	<u>483</u>	<u>14.3</u>	484	14.2	478	14.4	479	14.4	<u>479</u>	<u>14.4</u>

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.hmmmer: -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



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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

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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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 13:15:24 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 4 September 2007.