



SPEC® CINT2006 Result

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IBM Corporation

SPECint®2006 = 11.5

IBM System x3655 (AMD Opteron 2214)

SPECint_base2006 = 10.5

CPU2006 license: 11

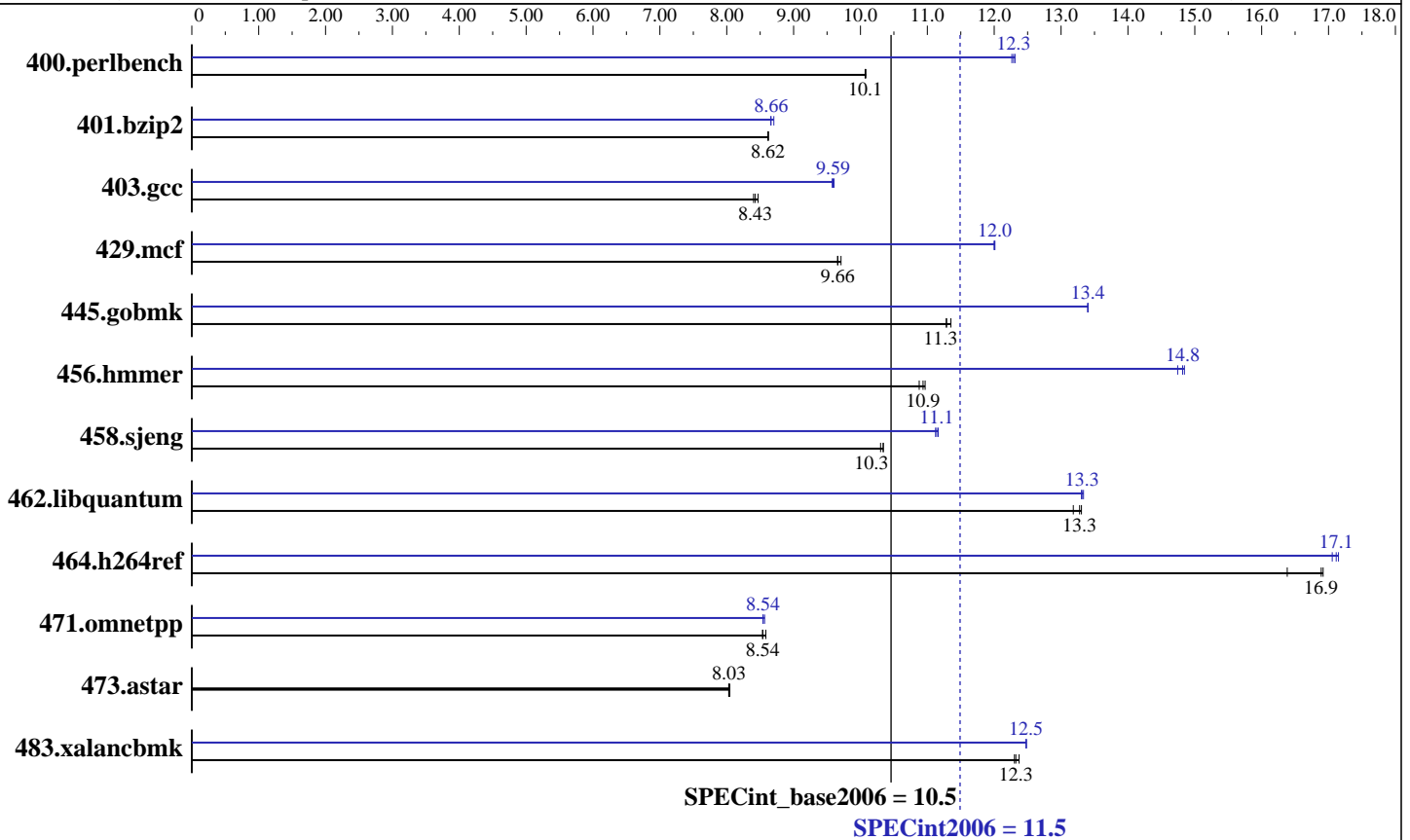
Test date: Aug-2007

Test sponsor: IBM Corporation

Hardware Availability: Oct-2006

Tested by: IBM Corporation

Software Availability: Mar-2007



Hardware

CPU Name: AMD Opteron 2214
 CPU Characteristics:
 CPU MHz: 2200
 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	<u>970</u>	<u>10.1</u>	969	10.1	970	10.1	797	12.3	<u>795</u>	<u>12.3</u>	794	12.3
401.bzip2	1119	8.62	1120	8.62	<u>1120</u>	<u>8.62</u>	1109	8.70	1114	8.66	<u>1114</u>	<u>8.66</u>
403.gcc	951	8.47	<u>955</u>	<u>8.43</u>	958	8.40	838	9.60	<u>839</u>	<u>9.59</u>	841	9.58
429.mcf	939	9.71	<u>944</u>	<u>9.66</u>	944	9.66	<u>759</u>	<u>12.0</u>	759	12.0	760	12.0
445.gobmk	924	11.4	<u>929</u>	<u>11.3</u>	930	11.3	783	13.4	<u>783</u>	<u>13.4</u>	783	13.4
456.hmmmer	858	10.9	<u>853</u>	<u>10.9</u>	851	11.0	628	14.8	633	14.7	<u>630</u>	<u>14.8</u>
458.sjeng	1170	10.3	<u>1170</u>	<u>10.3</u>	1175	10.3	1084	11.2	<u>1086</u>	<u>11.1</u>	1088	11.1
462.libquantum	1572	13.2	<u>1561</u>	<u>13.3</u>	1557	13.3	<u>1556</u>	<u>13.3</u>	1557	13.3	1554	13.3
464.h264ref	1308	16.9	1351	16.4	<u>1310</u>	<u>16.9</u>	1290	17.1	<u>1293</u>	<u>17.1</u>	1298	17.1
471.omnetpp	728	8.58	<u>732</u>	<u>8.54</u>	732	8.54	730	8.57	732	8.54	<u>732</u>	<u>8.54</u>
473.astar	873	8.05	<u>874</u>	<u>8.03</u>	874	8.03	873	8.05	<u>874</u>	<u>8.03</u>	874	8.03
483.xalancbmk	558	12.4	561	12.3	<u>560</u>	<u>12.3</u>	<u>553</u>	<u>12.5</u>	553	12.5	553	12.5

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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