



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 95.6

IBM BladeCenter LS41 (AMD Opteron 8218)

SPECint_rate_base2006 = 85.3

CPU2006 license: 11

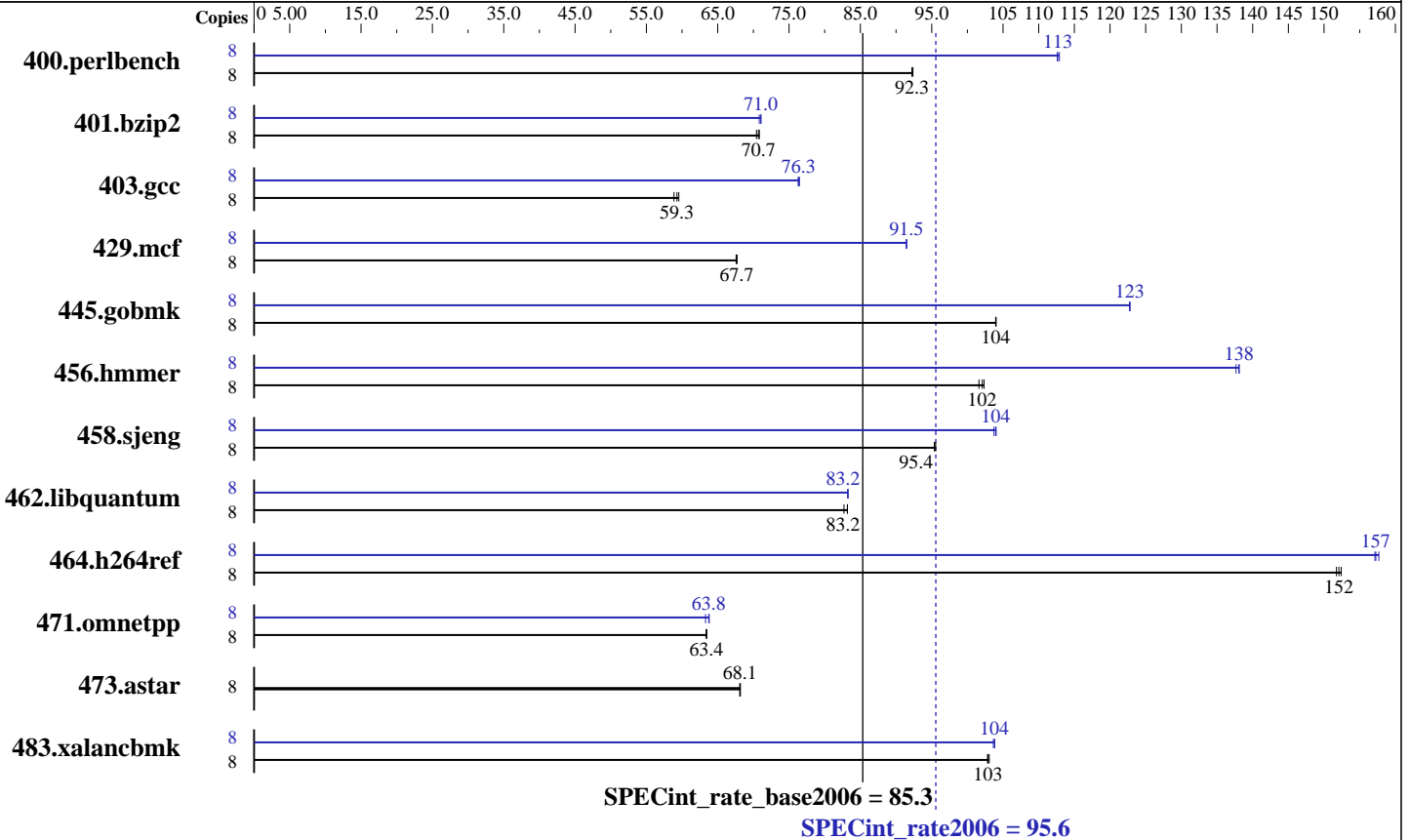
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2007

Hardware Availability: Oct-2006

Software Availability: Mar-2007



Hardware

CPU Name: AMD Opteron 8218
 CPU Characteristics:
 CPU MHz: 2600
 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, 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: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: MicroQuill SmartHeap 8.1



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Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|----------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|------------|------------|------------|-------------|-------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 8 | 846 | 92.4 | 847 | 92.2 | 847 | 92.3 | 8 | 694 | 113 | 692 | 113 | 694 | 113 |
| 401.bzip2 | 8 | 1090 | 70.8 | 1096 | 70.4 | 1092 | 70.7 | 8 | 1090 | 70.8 | 1086 | 71.1 | 1087 | 71.0 |
| 403.gcc | 8 | 1094 | 58.9 | 1081 | 59.5 | 1086 | 59.3 | 8 | 842 | 76.5 | 844 | 76.3 | 844 | 76.3 |
| 429.mcf | 8 | 1080 | 67.6 | 1078 | 67.7 | 1078 | 67.7 | 8 | 798 | 91.5 | 798 | 91.5 | 798 | 91.4 |
| 445.gobmk | 8 | 807 | 104 | 807 | 104 | 807 | 104 | 8 | 683 | 123 | 684 | 123 | 684 | 123 |
| 456.hmmmer | 8 | 731 | 102 | 729 | 102 | 734 | 102 | 8 | 540 | 138 | 541 | 138 | 542 | 138 |
| 458.sjeng | 8 | 1014 | 95.4 | 1013 | 95.6 | 1015 | 95.4 | 8 | 930 | 104 | 933 | 104 | 931 | 104 |
| 462.libquantum | 8 | 2004 | 82.7 | 1993 | 83.2 | 1993 | 83.2 | 8 | 1991 | 83.3 | 1992 | 83.2 | 1991 | 83.2 |
| 464.h264ref | 8 | 1162 | 152 | 1164 | 152 | 1167 | 152 | 8 | 1123 | 158 | 1127 | 157 | 1126 | 157 |
| 471.omnetpp | 8 | 788 | 63.4 | 788 | 63.5 | 789 | 63.4 | 8 | 790 | 63.3 | 784 | 63.8 | 784 | 63.8 |
| 473.astar | 8 | 824 | 68.2 | 825 | 68.1 | 825 | 68.1 | 8 | 824 | 68.2 | 825 | 68.1 | 825 | 68.1 |
| 483.xalanbmk | 8 | 536 | 103 | 537 | 103 | 536 | 103 | 8 | 533 | 104 | 532 | 104 | 532 | 104 |

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.xalanbmk: -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.hmmr: -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 12:46:28 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 August 2007.