



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 101

IBM BladeCenter LS41 (AMD Opteron 8220)

SPECint_rate_base2006 = 89.8

CPU2006 license: 11

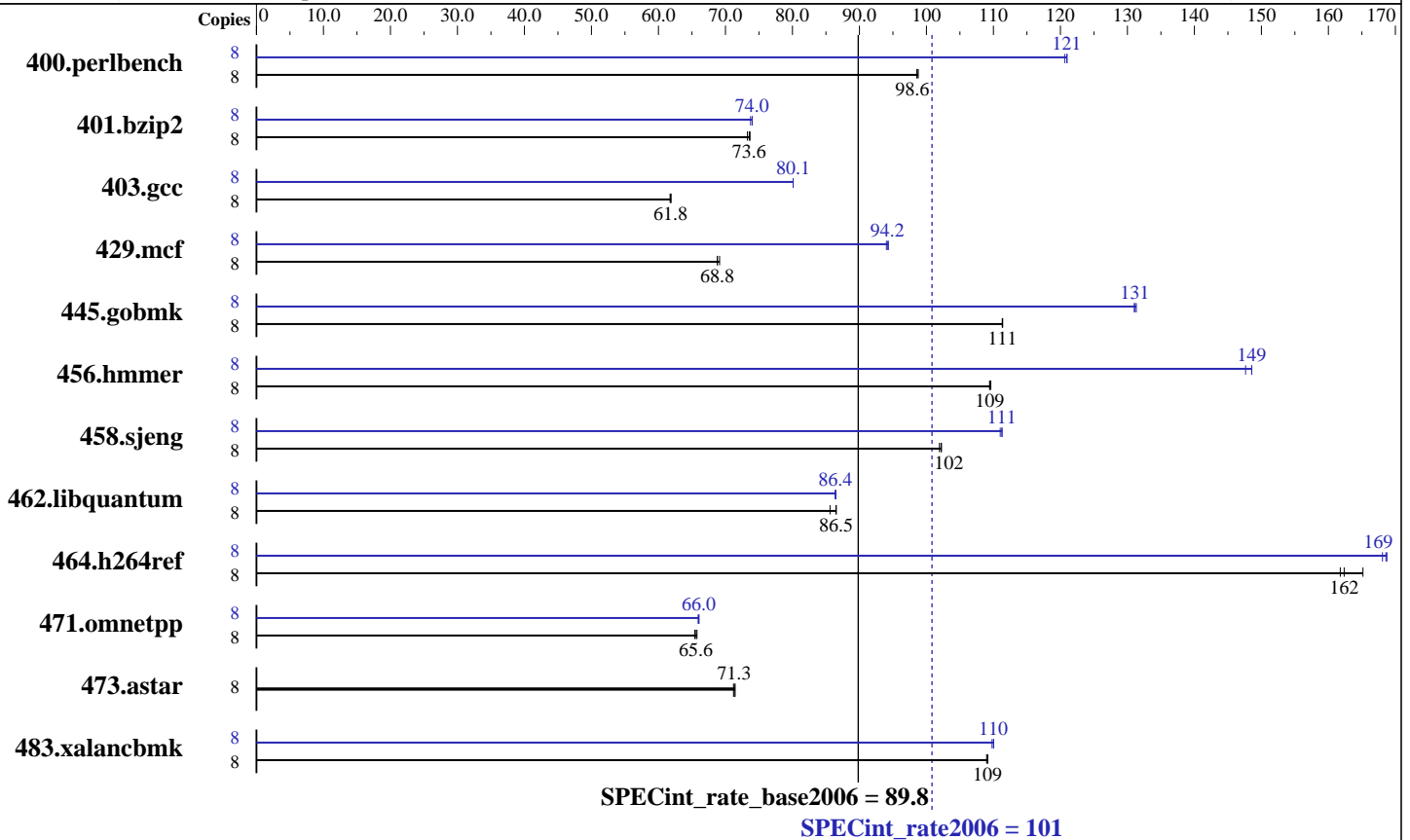
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2007

Hardware Availability: Feb-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, 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	793	98.6	<u>792</u>	<u>98.6</u>	791	98.8	8	646	121	648	121	<u>646</u>	<u>121</u>
401.bzip2	8	1053	73.3	<u>1050</u>	<u>73.6</u>	1048	73.7	8	1043	74.0	1047	73.7	<u>1043</u>	<u>74.0</u>
403.gcc	8	1041	61.9	<u>1041</u>	<u>61.8</u>	1043	61.7	8	<u>804</u>	<u>80.1</u>	804	80.1	804	80.1
429.mcf	8	1055	69.1	1061	68.8	<u>1061</u>	<u>68.8</u>	8	776	94.0	<u>775</u>	<u>94.2</u>	773	94.3
445.gobmk	8	753	111	<u>754</u>	<u>111</u>	754	111	8	639	131	641	131	<u>640</u>	<u>131</u>
456.hmmmer	8	682	109	<u>682</u>	<u>109</u>	681	110	8	506	148	502	149	<u>502</u>	<u>149</u>
458.sjeng	8	950	102	<u>947</u>	<u>102</u>	947	102	8	870	111	<u>870</u>	<u>111</u>	872	111
462.libquantum	8	1936	85.6	<u>1916</u>	<u>86.5</u>	1915	86.5	8	1916	86.5	1919	86.4	<u>1918</u>	<u>86.4</u>
464.h264ref	8	1072	165	1094	162	<u>1090</u>	<u>162</u>	8	<u>1050</u>	<u>169</u>	1049	169	1053	168
471.omnetpp	8	764	65.4	760	65.8	<u>762</u>	<u>65.6</u>	8	757	66.1	758	65.9	<u>757</u>	<u>66.0</u>
473.astar	8	789	71.2	<u>787</u>	<u>71.3</u>	786	71.4	8	789	71.2	<u>787</u>	<u>71.3</u>	786	71.4
483.xalancbmk	8	506	109	<u>506</u>	<u>109</u>	506	109	8	502	110	503	110	<u>502</u>	<u>110</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.xalanbmk: -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 12:50:41 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 8 August 2007.