



SPEC® CINT2006 Result

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IBM Corporation

SPECint®_rate2006 = 88.4

IBM BladeCenter LS41 (AMD Opteron 8220)

SPECint_rate_base2006 = 78.8

CPU2006 license: 11

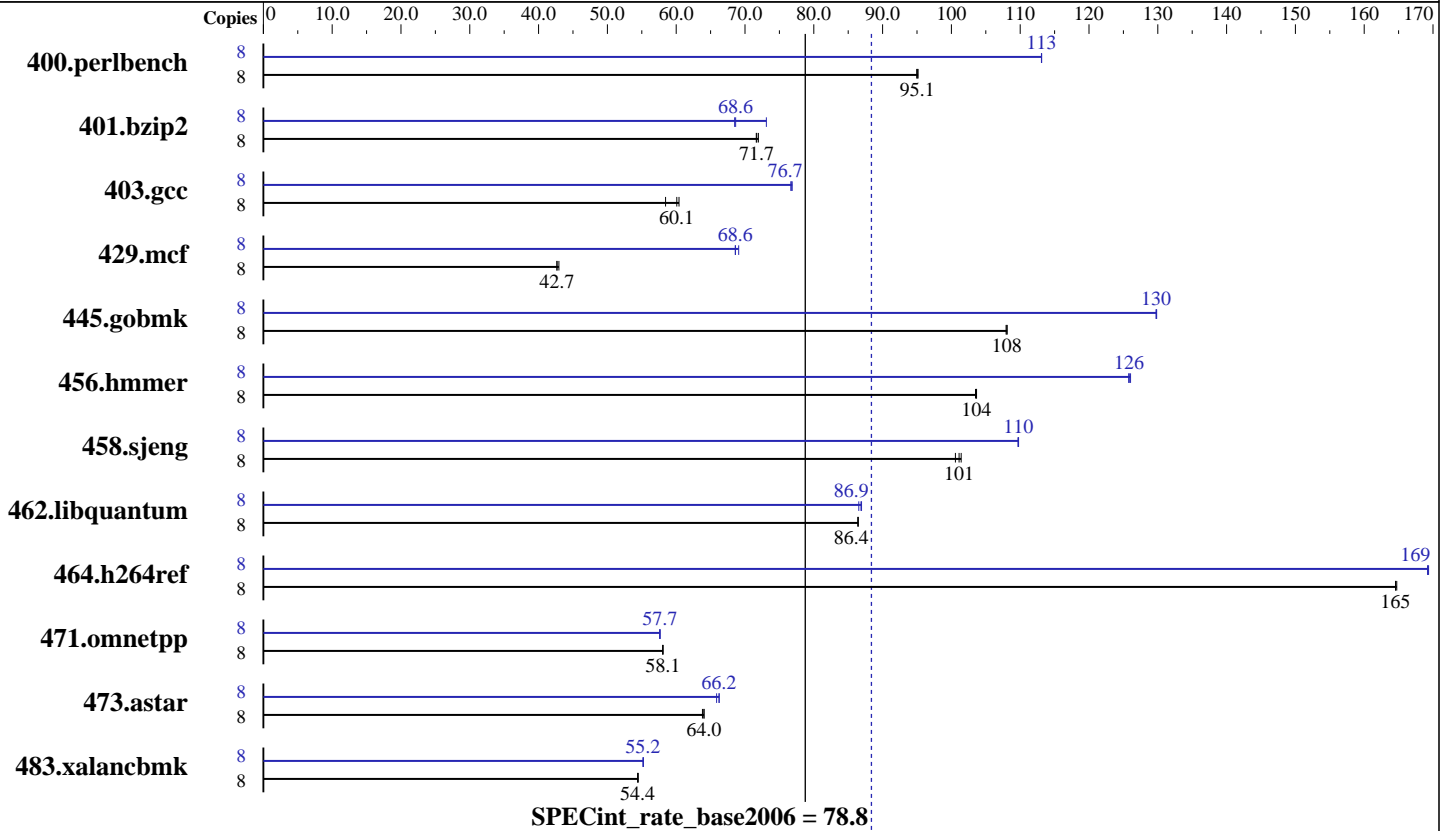
Test date: Feb-2007

Test sponsor: IBM Corporation

Hardware Availability: Feb-2007

Tested by: IBM Corporation

Software Availability: Aug-2006



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, 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 74 GB SAS, 10000 RPM
 Other Hardware: None

Software

Operating System: SLES9 SP3 for AMD64/EM64T
 Compiler: QLogic PathScale Compiler Suite 2.5
 Auto Parallel: No
 File System: ext3
 System State: Multi-user, run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None



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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	823	95.0	821	95.2	<u>822</u>	<u>95.1</u>	8	691	113	<u>691</u>	<u>113</u>	691	113
401.bzip2	8	1073	71.9	1078	71.6	<u>1077</u>	<u>71.7</u>	8	1056	73.1	1127	68.5	<u>1125</u>	<u>68.6</u>
403.gcc	8	1066	60.4	<u>1072</u>	<u>60.1</u>	1102	58.5	8	838	76.9	840	76.7	<u>839</u>	<u>76.7</u>
429.mcf	8	1699	43.0	<u>1710</u>	<u>42.7</u>	1710	42.7	8	1056	69.1	<u>1063</u>	<u>68.6</u>	1064	68.6
445.gobmk	8	776	108	<u>777</u>	<u>108</u>	777	108	8	647	130	646	130	<u>647</u>	<u>130</u>
456.hmmmer	8	<u>720</u>	<u>104</u>	721	104	720	104	8	<u>593</u>	<u>126</u>	593	126	592	126
458.sjeng	8	962	101	<u>957</u>	<u>101</u>	954	101	8	<u>882</u>	<u>110</u>	883	110	882	110
462.libquantum	8	1917	86.4	1918	86.4	<u>1918</u>	<u>86.4</u>	8	1907	86.9	<u>1908</u>	<u>86.9</u>	1915	86.5
464.h264ref	8	1075	165	<u>1076</u>	<u>165</u>	1076	165	8	1046	169	1045	169	<u>1046</u>	<u>169</u>
471.omnetpp	8	<u>861</u>	<u>58.1</u>	861	58.0	861	58.1	8	<u>867</u>	<u>57.7</u>	868	57.6	867	57.7
473.astar	8	880	63.8	<u>877</u>	<u>64.0</u>	877	64.0	8	<u>848</u>	<u>66.2</u>	853	65.9	848	66.2
483.xalanbmk	8	1015	54.4	<u>1014</u>	<u>54.4</u>	1013	54.5	8	<u>1000</u>	<u>55.2</u>	1000	55.2	999	55.2

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System 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:

-march=auto -Ofast

C++ benchmarks:

-march=auto -Ofast -m32

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
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

Peak Optimization Flags

C benchmarks:

400.perlbench: -march=auto -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast

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Peak Optimization Flags (Continued)

401.bzip2: -march=auto -O3 -LNO:ou_prod_max=10 -OPT:Ofast
-OPT:alias=disjoint

403.gcc: -march=auto -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -m32 -O3 -OPT:Ofast

429.mcf: -march=auto -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -m32 -O2 -ipa

445.gobmk: -march=auto -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: -march=auto -O2 -OPT:alias=disjoint -WOPT:aggstr=0
-CG:cflow=0

458.sjeng: -march=auto -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -O3 -IPA:plimit=50000
-IPA:pu_reorder=2

462.libquantum: -march=auto -O3 -ipa -CG:local_fwd_sched=on
-IPA:space=1000

464.h264ref: -march=auto -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -O3 -IPA:plimit=20000
-OPT:alias=disjoint -LNO:prefetch=0

C++ benchmarks:

471.omnetpp: -march=auto -Ofast -IPA:pu_reorder=2 -CG:gcm=off -m32

473.astar: -march=auto -fb_create fbdata(pass 1)
-fb_opt fbdata(pass 2) -Ofast

483.xalancbmk: -march=auto -Ofast -m32 -OPT:unroll_times_max=8

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.20090714.17.html



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You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.17.xml

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