



# SPEC® CINT2006 Result

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## IBM Corporation

SPECint®\_rate2006 = 95.4

### IBM System x3755 (AMD Opteron 8222 SE)

SPECint\_rate\_base2006 = 84.4

CPU2006 license: 11

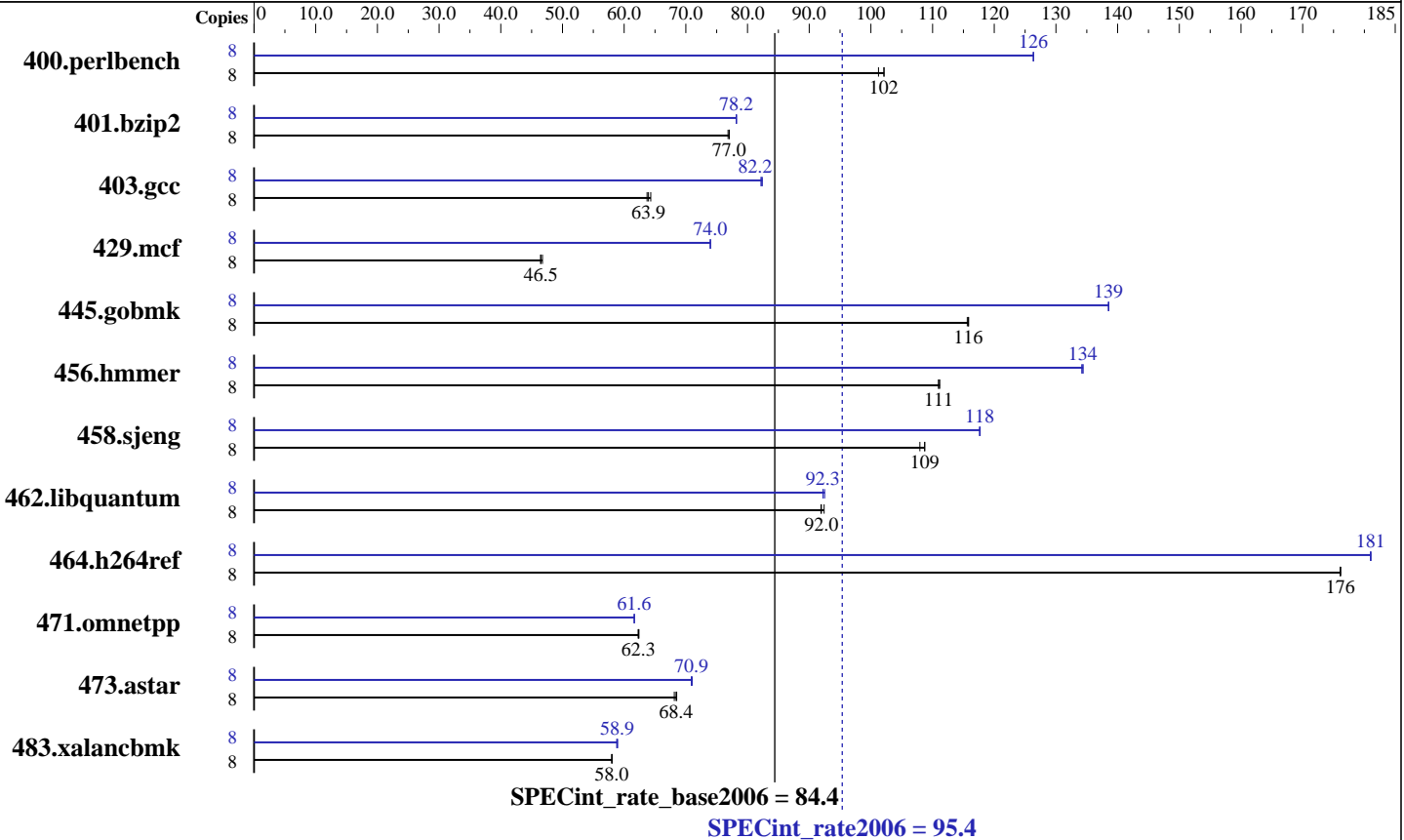
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2007

Hardware Availability: Apr-2007

Software Availability: Aug-2006



### Hardware

CPU Name: AMD Opteron 8222 SE  
 CPU Characteristics: 3000  
 CPU MHz: 3000  
 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 73 GB SATA, 15000 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	772	101	765	102	<u>765</u>	<u>102</u>	8	<u>619</u>	<u>126</u>	619	126	619	126
401.bzip2	8	1002	77.0	<u>1002</u>	<u>77.0</u>	1005	76.8	8	988	78.2	987	78.2	<u>987</u>	<u>78.2</u>
403.gcc	8	1001	64.3	1011	63.7	<u>1007</u>	<u>63.9</u>	8	<u>783</u>	<u>82.2</u>	782	82.4	784	82.2
429.mcf	8	1560	46.8	1571	46.5	<u>1569</u>	<u>46.5</u>	8	986	74.0	986	74.0	<u>986</u>	<u>74.0</u>
445.gobmk	8	724	116	726	116	<u>725</u>	<u>116</u>	8	<u>606</u>	<u>139</u>	606	138	606	139
456.hmmmer	8	671	111	673	111	<u>672</u>	<u>111</u>	8	<u>556</u>	<u>134</u>	556	134	555	134
458.sjeng	8	<u>890</u>	<u>109</u>	890	109	897	108	8	822	118	823	118	<u>823</u>	<u>118</u>
462.libquantum	8	1794	92.4	1804	91.9	<u>1802</u>	<u>92.0</u>	8	1792	92.5	1797	92.2	<u>1797</u>	<u>92.3</u>
464.h264ref	8	1006	176	<u>1005</u>	<u>176</u>	1005	176	8	978	181	<u>978</u>	<u>181</u>	978	181
471.omnetpp	8	801	62.4	<u>802</u>	<u>62.3</u>	803	62.3	8	<u>811</u>	<u>61.6</u>	811	61.6	811	61.7
473.astar	8	<u>821</u>	<u>68.4</u>	824	68.1	820	68.5	8	790	71.1	792	70.9	<u>792</u>	<u>70.9</u>
483.xalancbmk	8	<u>952</u>	<u>58.0</u>	952	58.0	951	58.0	8	<u>938</u>	<u>58.9</u>	939	58.8	936	59.0

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.xalancbmk: -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.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

## 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.20090714.29.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.29.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.20090714.29.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.29.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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