



# SPEC® CINT2006 Result

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## IBM Corporation

**SPECint®2006 = 10.9**

### IBM BladeCenter LS41 (AMD Opteron 8214)

**SPECint\_base2006 = 9.85**

CPU2006 license: 11

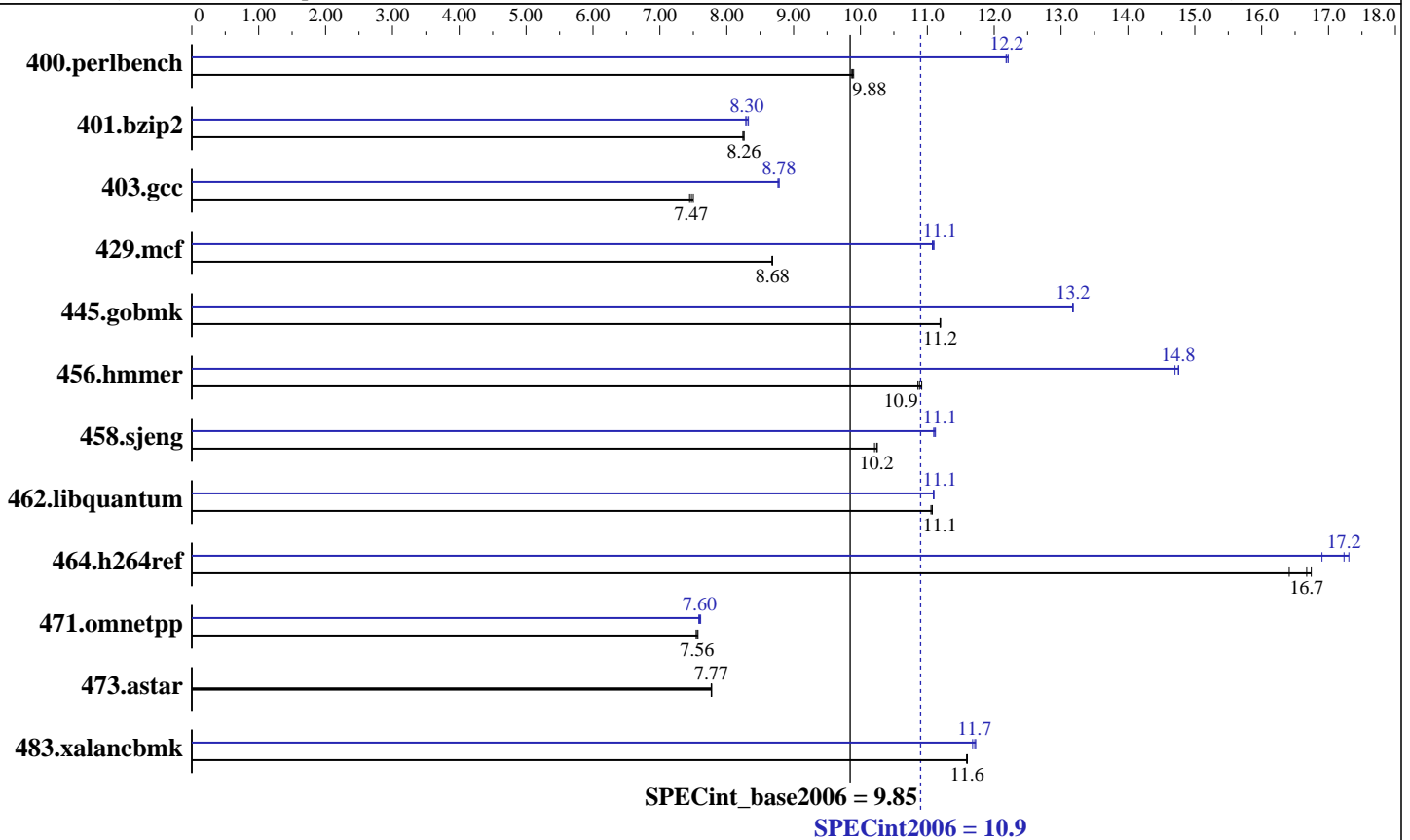
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jul-2007

Hardware Availability: Oct-2006

Software Availability: Mar-2007



#### Hardware

CPU Name: AMD Opteron 8214  
 CPU Characteristics:  
 CPU MHz: 2200  
 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: 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	990	9.87	987	9.90	<u>989</u>	<u>9.88</u>	802	12.2	<u>802</u>	<u>12.2</u>	800	12.2
401.bzip2	1171	8.24	1169	8.26	<u>1169</u>	<u>8.26</u>	1159	8.32	<u>1163</u>	<u>8.30</u>	1165	8.28
403.gcc	<u>1077</u>	<u>7.47</u>	1073	7.50	1081	7.44	917	8.78	918	8.77	<u>917</u>	<u>8.78</u>
429.mcf	1051	8.68	1050	8.69	<u>1050</u>	<u>8.68</u>	<u>823</u>	<u>11.1</u>	822	11.1	823	11.1
445.gobmk	937	11.2	<u>937</u>	<u>11.2</u>	937	11.2	<u>796</u>	<u>13.2</u>	796	13.2	796	13.2
456.hammer	855	10.9	859	10.9	<u>857</u>	<u>10.9</u>	632	14.8	635	14.7	<u>632</u>	<u>14.8</u>
458.sjeng	1185	10.2	<u>1181</u>	<u>10.2</u>	1180	10.3	1091	11.1	1088	11.1	<u>1089</u>	<u>11.1</u>
462.libquantum	1874	11.1	1871	11.1	<u>1872</u>	<u>11.1</u>	1867	11.1	1868	11.1	<u>1867</u>	<u>11.1</u>
464.h264ref	1322	16.7	<u>1327</u>	<u>16.7</u>	1348	16.4	1309	16.9	1279	17.3	<u>1284</u>	<u>17.2</u>
471.omnetpp	826	7.57	<u>827</u>	<u>7.56</u>	829	7.54	821	7.61	824	7.58	<u>823</u>	<u>7.60</u>
473.astar	904	7.77	<u>903</u>	<u>7.77</u>	903	7.78	904	7.77	<u>903</u>	<u>7.77</u>	903	7.78
483.xalancbmk	595	11.6	596	11.6	<u>595</u>	<u>11.6</u>	589	11.7	591	11.7	<u>589</u>	<u>11.7</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.hammer: -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](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](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.13.xml)



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

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