



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®2006 = 11.6

IBM BladeCenter HS12 (Intel Celeron 445)

SPECfp_base2006 = 11.1

CPU2006 license: 11

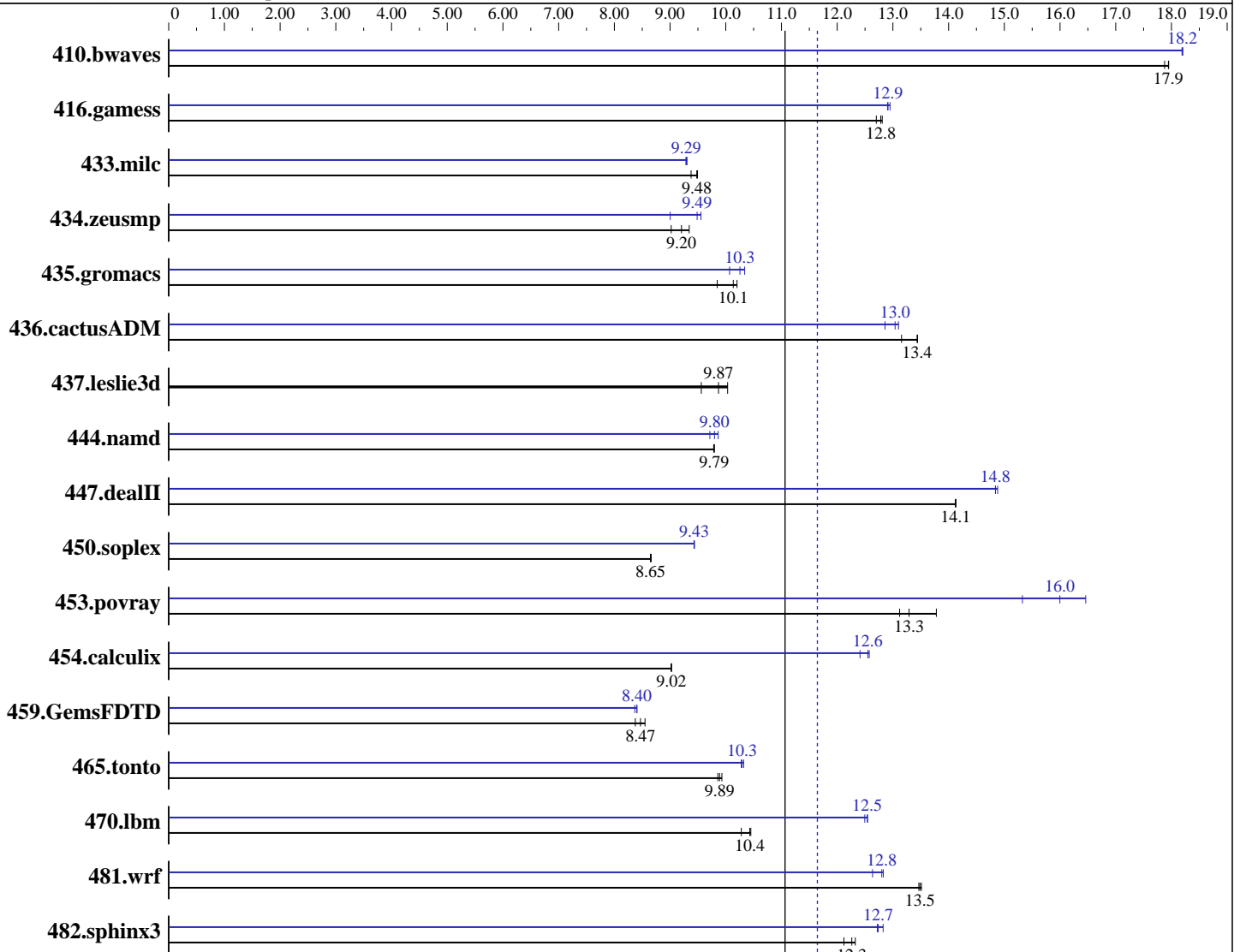
Test date: May-2008

Test sponsor: IBM Corporation

Hardware Availability: May-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



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Hardware

CPU Name: Intel Celeron 445
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 1866
 FPU: Integrated
 CPU(s) enabled: 1 core, 1 chip, 1 core/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per chip
 Secondary Cache: 512 KB I+D on chip per chip

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Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Multi-user, run level 3
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4 x 2 GB DDR2-5300 ECC)
Disk Subsystem: 1 x 73 GB SAS, 10000 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.17.50.0.15

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>757</u>	<u>17.9</u>	760	17.9	757	18.0	747	18.2	747	18.2	<u>747</u>	<u>18.2</u>
416.gamess	1529	12.8	<u>1532</u>	<u>12.8</u>	1541	12.7	1512	12.9	1517	12.9	<u>1516</u>	<u>12.9</u>
433.milc	979	9.38	<u>968</u>	<u>9.48</u>	967	9.49	989	9.28	<u>988</u>	<u>9.29</u>	987	9.30
434.zeusmp	1009	9.02	<u>989</u>	<u>9.20</u>	974	9.34	<u>959</u>	<u>9.49</u>	952	9.55	1011	9.00
435.gromacs	700	10.2	725	9.85	<u>705</u>	<u>10.1</u>	691	10.3	709	10.1	<u>696</u>	<u>10.3</u>
436.cactusADM	908	13.2	<u>890</u>	<u>13.4</u>	889	13.4	<u>916</u>	<u>13.0</u>	912	13.1	929	12.9
437.leslie3d	983	9.56	937	10.0	<u>952</u>	<u>9.87</u>	983	9.56	937	10.0	<u>952</u>	<u>9.87</u>
444.namd	819	9.79	<u>819</u>	<u>9.79</u>	820	9.78	813	9.86	<u>819</u>	<u>9.80</u>	826	9.71
447.dealII	810	14.1	<u>810</u>	<u>14.1</u>	810	14.1	769	14.9	<u>771</u>	<u>14.8</u>	771	14.8
450.soplex	964	8.65	963	8.66	<u>964</u>	<u>8.65</u>	884	9.43	<u>884</u>	<u>9.43</u>	884	9.44
453.povray	386	13.8	405	13.1	<u>400</u>	<u>13.3</u>	323	16.5	<u>333</u>	<u>16.0</u>	347	15.3
454.calculix	915	9.02	914	9.03	<u>914</u>	<u>9.02</u>	656	12.6	<u>657</u>	<u>12.6</u>	665	12.4
459.GemsFDTD	1267	8.38	1241	8.55	<u>1253</u>	<u>8.47</u>	1268	8.37	1262	8.41	<u>1263</u>	<u>8.40</u>
465.tonto	<u>995</u>	<u>9.89</u>	998	9.86	991	9.93	957	10.3	<u>956</u>	<u>10.3</u>	953	10.3
470.lbm	1337	10.3	<u>1317</u>	<u>10.4</u>	1315	10.4	<u>1096</u>	<u>12.5</u>	1095	12.5	1100	12.5
481.wrf	<u>828</u>	<u>13.5</u>	827	13.5	830	13.5	<u>873</u>	<u>12.8</u>	871	12.8	884	12.6
482.sphinx3	<u>1589</u>	<u>12.3</u>	1581	12.3	1608	12.1	1520	12.8	1532	12.7	<u>1530</u>	<u>12.7</u>

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

General Notes

All benchmarks compiled in 64-bit mode except 450.soplex, 470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Enabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 200M

Base Compiler Invocation

C benchmarks:
icc

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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-fast -parallel

C++ benchmarks:
-fast -parallel

Fortran benchmarks:
-fast -parallel

Benchmarks using both Fortran and C:
-fast -parallel



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Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

```
433.milc: icc
```

C++ benchmarks (except as noted below):

```
icpc
```

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks:

```
ifort
```

Benchmarks using both Fortran and C:

```
icc ifort
```

Peak Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-req- -prefetch -opt-malloc-options=3
```

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch -parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch -parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -parallel -prefetch -auto-ilp32

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revC.20090713.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-fp-linux64-revC.20090713.xml>



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