



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®2006 = 14.3

IBM BladeCenter HS21 XM (Intel Xeon E5320)

SPECfp_base2006 = 12.3

CPU2006 license: 11

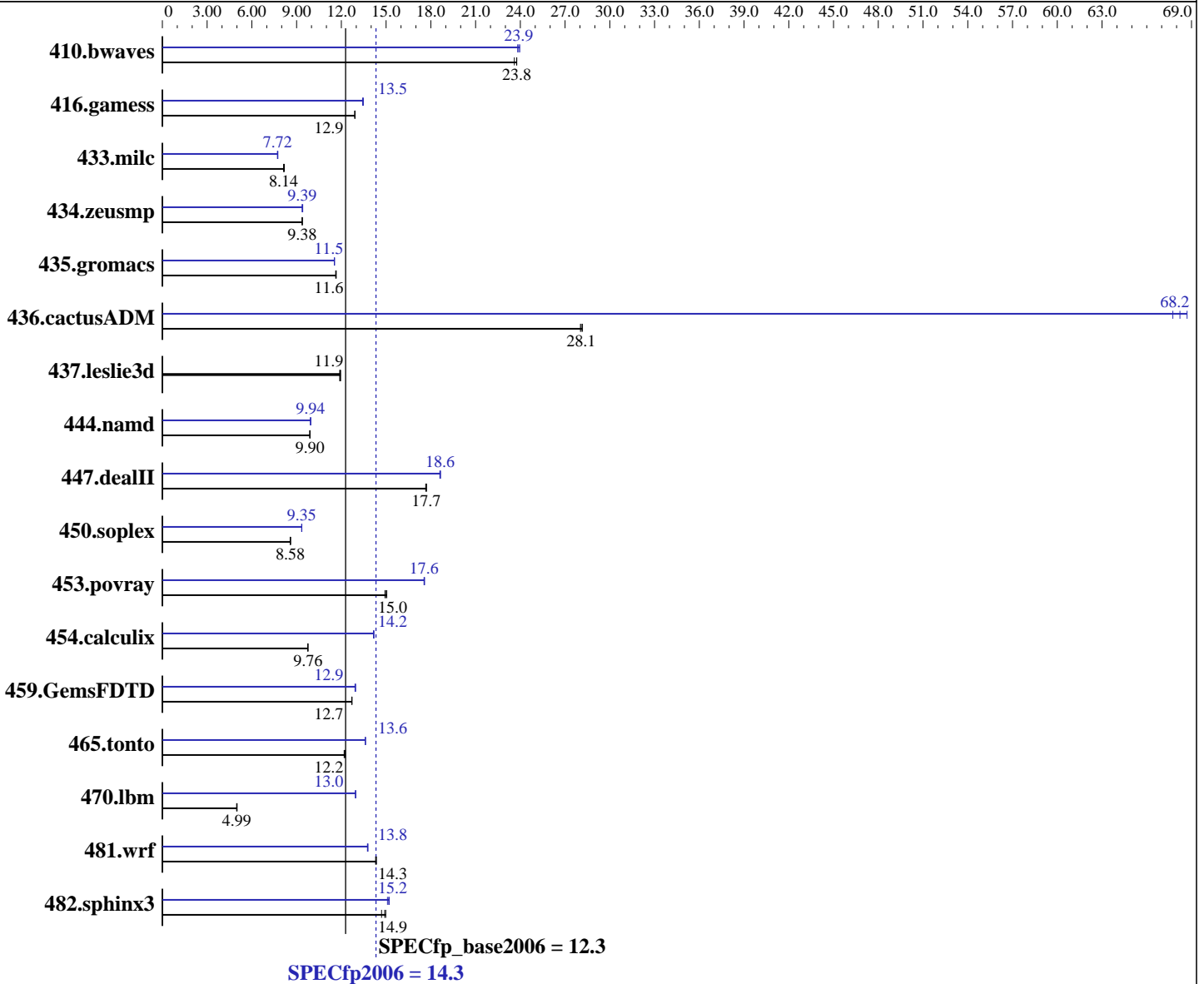
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Sep-2007

Hardware Availability: Feb-2007

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5320
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 1860
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System: SLES 10 (x86_64), 2.6.16.21-0.8-smp
 Compiler: Intel C++ and Fortran Compiler for Linux version 10.1
 Build 20070824
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Multi-user, run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2GB DRR2-5300F ECC)
Disk Subsystem: 1 x 36 GB SAS, 10000 RPM
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>572</u>	<u>23.8</u>	572	23.8	576	23.6	<u>569</u>	<u>23.9</u>	567	24.0	570	23.8
416.gamess	<u>1517</u>	<u>12.9</u>	1516	12.9	1518	12.9	1453	13.5	<u>1456</u>	<u>13.5</u>	1459	13.4
433.milc	<u>1128</u>	<u>8.14</u>	1122	8.18	1128	8.13	1185	7.75	<u>1189</u>	<u>7.72</u>	1189	7.72
434.zeusmp	971	9.37	970	9.38	<u>970</u>	<u>9.38</u>	<u>970</u>	<u>9.39</u>	971	9.37	967	9.41
435.gromacs	<u>613</u>	<u>11.6</u>	614	11.6	613	11.7	619	11.5	<u>619</u>	<u>11.5</u>	619	11.5
436.cactusADM	424	28.2	426	28.0	<u>426</u>	<u>28.1</u>	176	67.7	174	68.7	<u>175</u>	<u>68.2</u>
437.leslie3d	786	12.0	<u>789</u>	<u>11.9</u>	791	11.9	786	12.0	<u>789</u>	<u>11.9</u>	791	11.9
444.namd	<u>811</u>	<u>9.90</u>	812	9.88	810	9.90	808	9.93	<u>807</u>	<u>9.94</u>	806	9.95
447.dealII	<u>646</u>	<u>17.7</u>	648	17.7	646	17.7	615	18.6	613	18.7	<u>614</u>	<u>18.6</u>
450.soplex	973	8.57	<u>972</u>	<u>8.58</u>	970	8.60	893	9.34	892	9.35	<u>892</u>	<u>9.35</u>
453.povray	354	15.0	356	14.9	<u>355</u>	<u>15.0</u>	<u>303</u>	<u>17.6</u>	303	17.6	303	17.5
454.calculix	<u>845</u>	<u>9.76</u>	845	9.76	846	9.75	582	14.2	<u>582</u>	<u>14.2</u>	583	14.2
459.GemsFDTD	836	12.7	<u>835</u>	<u>12.7</u>	834	12.7	821	12.9	819	13.0	<u>820</u>	<u>12.9</u>
465.tonto	802	12.3	<u>805</u>	<u>12.2</u>	807	12.2	723	13.6	723	13.6	<u>723</u>	<u>13.6</u>
470.lbm	<u>2755</u>	<u>4.99</u>	2741	5.01	2756	4.99	1061	13.0	1061	13.0	<u>1061</u>	<u>13.0</u>
481.wrf	779	14.3	<u>779</u>	<u>14.3</u>	781	14.3	812	13.7	810	13.8	<u>811</u>	<u>13.8</u>
482.sphinx3	<u>1308</u>	<u>14.9</u>	1326	14.7	1301	15.0	1291	15.1	<u>1284</u>	<u>15.2</u>	1282	15.2

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

General Notes

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

C++ benchmarks:
icpc

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Base Compiler Invocation (Continued)

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

Peak Compiler Invocation

C benchmarks (except as noted below):

/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib

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Peak Compiler Invocation (Continued)

C benchmarks (except as noted below) (continued):

-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/include

433.milc: icc

C++ benchmarks (except as noted below):

icpc

450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/bin/icpc

-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/lib

-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070824/Linux32/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-rep- -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-intel64-linux-flags.20090714.21.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.21.xml>



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