



SPEC[®] CFP2006 Result

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IBM Corporation

SPECfp[®]_rate2006 = 46.2

IBM BladeCenter HS12 (Intel Xeon X3363)

SPECfp_rate_base2006 = 41.5

CPU2006 license: 11

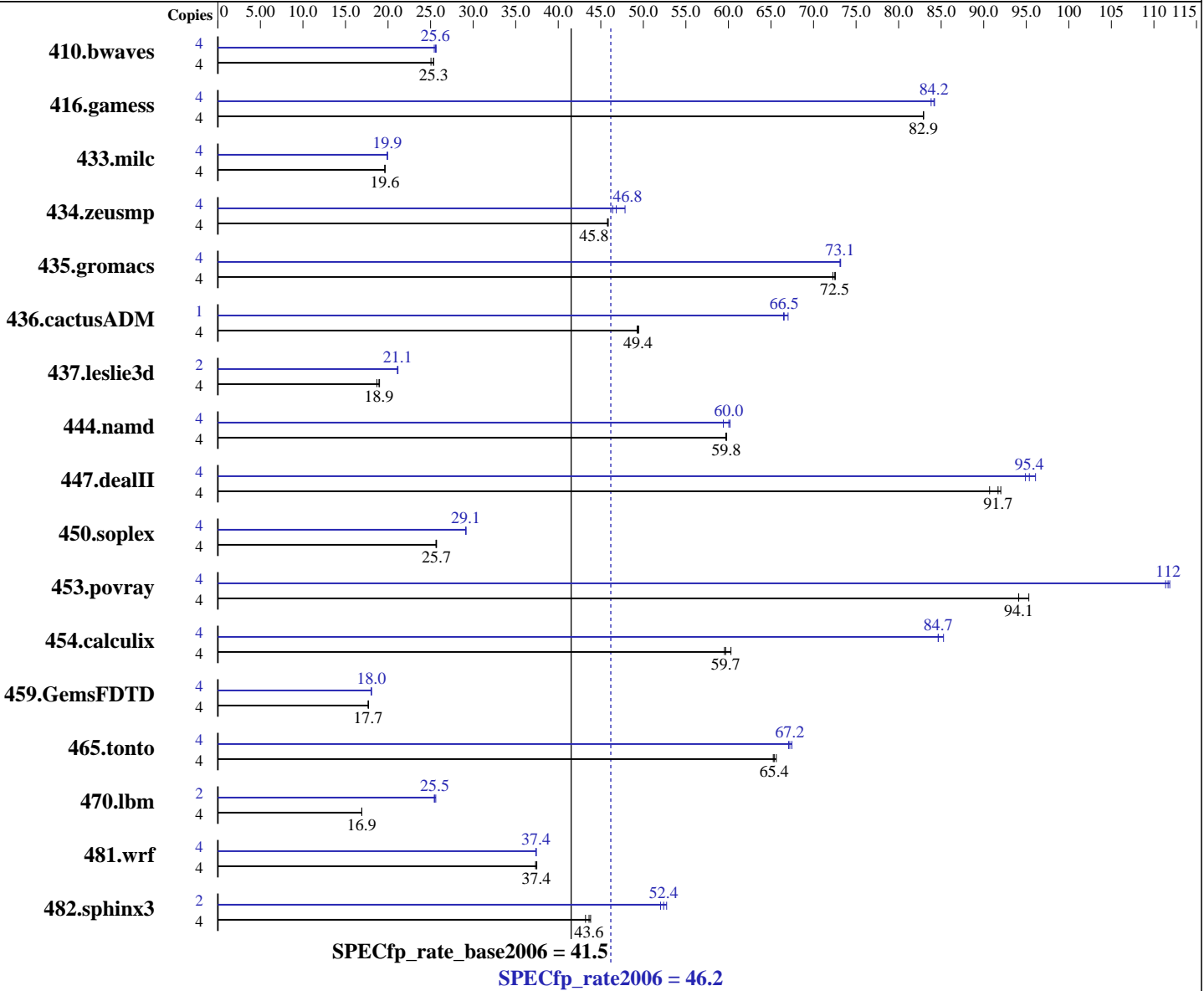
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Mar-2008

Hardware Availability: May-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X3363
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2833
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2171	25.0	2144	25.4	<u>2145</u>	<u>25.3</u>	4	<u>2126</u>	<u>25.6</u>	2137	25.4	2119	25.7
416.gamess	4	<u>945</u>	<u>82.9</u>	944	82.9	945	82.9	4	930	84.2	934	83.8	<u>931</u>	<u>84.2</u>
433.milc	4	1871	19.6	1870	19.6	<u>1870</u>	<u>19.6</u>	4	1845	19.9	1841	19.9	<u>1843</u>	<u>19.9</u>
434.zeusmp	4	795	45.8	794	45.9	<u>794</u>	<u>45.8</u>	4	<u>777</u>	<u>46.8</u>	761	47.9	785	46.4
435.gromacs	4	395	72.3	394	72.6	<u>394</u>	<u>72.5</u>	4	391	73.1	390	73.2	<u>391</u>	<u>73.1</u>
436.cactusADM	4	970	49.3	<u>968</u>	<u>49.4</u>	967	49.5	1	180	66.5	<u>180</u>	<u>66.5</u>	178	67.0
437.leslie3d	4	2012	18.7	1979	19.0	<u>1986</u>	<u>18.9</u>	2	891	21.1	888	21.2	<u>889</u>	<u>21.1</u>
444.namd	4	<u>537</u>	<u>59.8</u>	536	59.8	538	59.7	4	533	60.2	<u>534</u>	<u>60.0</u>	540	59.4
447.dealII	4	497	92.0	505	90.7	<u>499</u>	<u>91.7</u>	4	<u>480</u>	<u>95.4</u>	482	94.9	476	96.1
450.soplex	4	1298	25.7	<u>1299</u>	<u>25.7</u>	1302	25.6	4	1144	29.2	1145	29.1	<u>1145</u>	<u>29.1</u>
453.povray	4	223	95.3	<u>226</u>	<u>94.1</u>	226	94.1	4	191	111	<u>191</u>	<u>112</u>	190	112
454.calculix	4	547	60.3	<u>553</u>	<u>59.7</u>	554	59.5	4	390	84.6	387	85.3	<u>390</u>	<u>84.7</u>
459.GemsFDTD	4	2396	17.7	<u>2402</u>	<u>17.7</u>	2402	17.7	4	2352	18.0	<u>2352</u>	<u>18.0</u>	2354	18.0
465.tonto	4	<u>602</u>	<u>65.4</u>	603	65.3	600	65.6	4	583	67.5	<u>586</u>	<u>67.2</u>	587	67.1
470.lbm	4	3250	16.9	<u>3249</u>	<u>16.9</u>	3248	16.9	2	1073	25.6	<u>1078</u>	<u>25.5</u>	1081	25.4
481.wrf	4	<u>1194</u>	<u>37.4</u>	1192	37.5	1197	37.3	4	<u>1195</u>	<u>37.4</u>	1194	37.4	1196	37.4
482.sphinx3	4	1780	43.8	<u>1787</u>	<u>43.6</u>	1804	43.2	2	749	52.0	<u>744</u>	<u>52.4</u>	739	52.7

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 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Disabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
taskset utility used to bind CPU(s) to processes
Powersaved dameon was disabled in OS



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Base Compiler Invocation

C benchmarks:

icc

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

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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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 (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/include
```

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
444.namd: -DSPEC_CPU_LP64
447.deallI: -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

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

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

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 -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.html>



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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.xml>

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