



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®_rate2006 = 38.4

IBM System x3650 (Intel Xeon E5205)

SPECfp_rate_base2006 = 34.9

CPU2006 license: 11

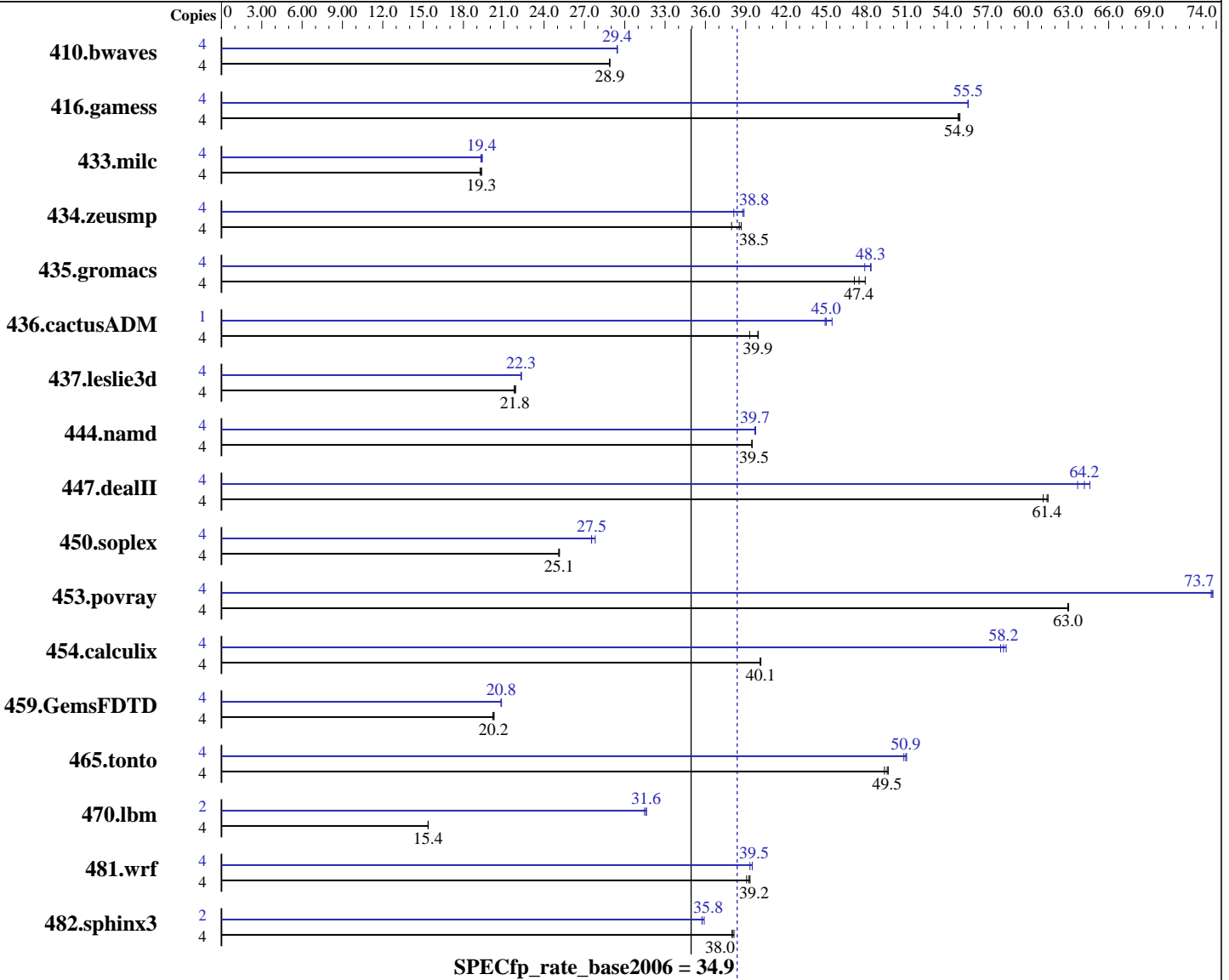
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Jan-2008

Hardware Availability: Mar-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5205
 CPU Characteristics: 1066MHz system bus
 CPU MHz: 1866
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 6 MB I+D on chip per chip

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Software

Operating System: SuSE Linux Enterprise Server 10 (x86_64), Kernel 2.6.16.21-0.8-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: 16 GB (8 x 2 GB DDR2-5300F ECC)
Disk Subsystem: 1 x 36 GB SAS, 15000 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	1882	28.9	1882	28.9	<u>1882</u>	<u>28.9</u>	4	<u>1847</u>	<u>29.4</u>	1845	29.5	1847	29.4
416.gamess	4	1426	54.9	1429	54.8	<u>1427</u>	<u>54.9</u>	4	<u>1410</u>	<u>55.5</u>	1410	55.5	1410	55.5
433.milc	4	<u>1900</u>	<u>19.3</u>	1897	19.4	1909	19.2	4	1903	19.3	<u>1896</u>	<u>19.4</u>	1892	19.4
434.zeusmp	4	<u>945</u>	<u>38.5</u>	959	37.9	941	38.7	4	955	38.1	936	38.9	<u>939</u>	<u>38.8</u>
435.gromacs	4	596	47.9	<u>602</u>	<u>47.4</u>	607	47.1	4	<u>591</u>	<u>48.3</u>	591	48.3	597	47.9
436.cactusADM	4	1217	39.3	1197	39.9	<u>1198</u>	<u>39.9</u>	1	<u>266</u>	<u>45.0</u>	263	45.4	266	44.9
437.leslie3d	4	1718	21.9	1726	21.8	<u>1723</u>	<u>21.8</u>	4	1688	22.3	1685	22.3	<u>1687</u>	<u>22.3</u>
444.namd	4	813	39.5	812	39.5	<u>813</u>	<u>39.5</u>	4	<u>808</u>	<u>39.7</u>	808	39.7	807	39.7
447.dealII	4	<u>745</u>	<u>61.4</u>	744	61.5	749	61.1	4	708	64.6	718	63.7	<u>713</u>	<u>64.2</u>
450.soplex	4	1327	25.1	1330	25.1	<u>1328</u>	<u>25.1</u>	4	1200	27.8	<u>1212</u>	<u>27.5</u>	1212	27.5
453.povray	4	338	63.0	<u>338</u>	<u>63.0</u>	338	63.0	4	289	73.8	289	73.6	<u>289</u>	<u>73.7</u>
454.calculix	4	822	40.1	824	40.1	<u>823</u>	<u>40.1</u>	4	569	58.0	<u>567</u>	<u>58.2</u>	565	58.4
459.GemsFDTD	4	2092	20.3	<u>2097</u>	<u>20.2</u>	2103	20.2	4	<u>2039</u>	<u>20.8</u>	2041	20.8	2037	20.8
465.tonto	4	<u>795</u>	<u>49.5</u>	793	49.6	798	49.3	4	775	50.8	772	51.0	<u>773</u>	<u>50.9</u>
470.lbm	4	3575	15.4	<u>3574</u>	<u>15.4</u>	3574	15.4	2	<u>870</u>	<u>31.6</u>	869	31.6	873	31.5
481.wrf	4	1144	39.1	1136	39.3	<u>1139</u>	<u>39.2</u>	4	<u>1132</u>	<u>39.5</u>	1131	39.5	1136	39.3
482.sphinx3	4	<u>2051</u>	<u>38.0</u>	2052	38.0	2045	38.1	2	1090	35.7	1085	35.9	<u>1090</u>	<u>35.8</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 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 Enabled
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to physical,0
KMP_STACKSIZE set to 64M
Powersaved dameon was disabled in OS
taskset utility used to bind CPU(s) to processes



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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.20090714.14.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.20090714.14.xml>

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