



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp®_rate2006 = 64.1

IBM BladeCenter HS21 XM (Intel Xeon E5420)

SPECfp_rate_base2006 = 62.0

CPU2006 license: 11

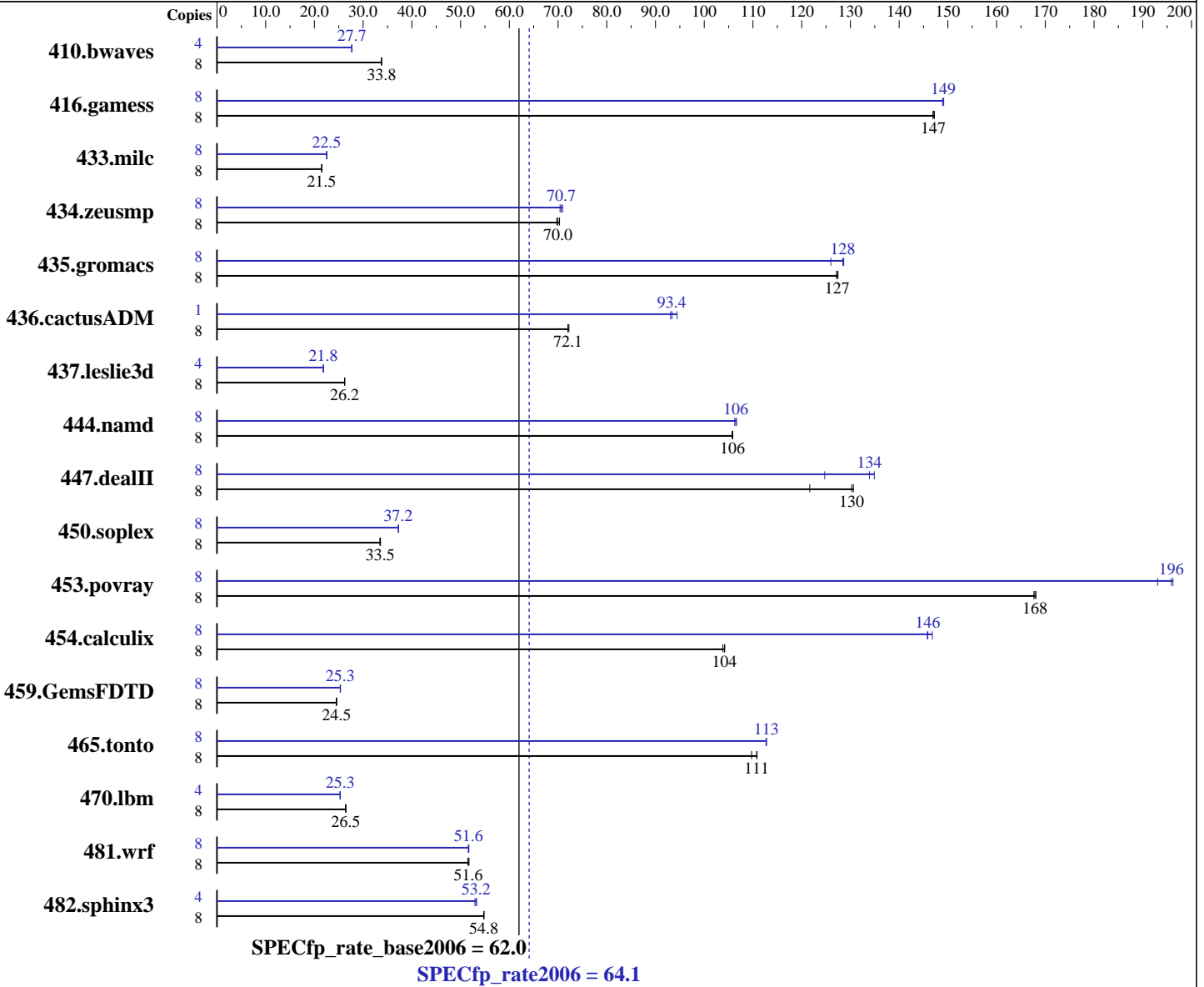
Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5420
 CPU Characteristics: 1333MHz system bus
 CPU MHz: 2500
 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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 64.1

IBM BladeCenter HS21 XM (Intel Xeon E5420)

SPECfp_rate_base2006 = 62.0

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2 GB DDR2-5300F ECC)
Disk Subsystem: 1 x 36 GB SAS, 10000 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: MicroQuill SmartHeap 8.1
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	8	3218	33.8	<u>3219</u>	<u>33.8</u>	3219	33.8	4	1966	27.7	1963	27.7	<u>1963</u>	<u>27.7</u>
416.gamess	8	1064	147	1066	147	<u>1066</u>	<u>147</u>	8	<u>1051</u>	<u>149</u>	1052	149	1050	149
433.milc	8	3416	21.5	3416	21.5	<u>3416</u>	<u>21.5</u>	8	3266	22.5	3257	22.6	<u>3260</u>	<u>22.5</u>
434.zeusmp	8	1035	70.3	1044	69.7	<u>1040</u>	<u>70.0</u>	8	<u>1030</u>	<u>70.7</u>	1026	70.9	1034	70.4
435.gromacs	8	449	127	<u>449</u>	<u>127</u>	448	127	8	444	129	453	126	<u>445</u>	<u>128</u>
436.cactusADM	8	1328	72.0	1323	72.2	<u>1327</u>	<u>72.1</u>	1	<u>128</u>	<u>93.4</u>	127	94.4	128	93.1
437.leslie3d	8	<u>2869</u>	<u>26.2</u>	2866	26.2	2872	26.2	4	1723	21.8	<u>1722</u>	<u>21.8</u>	1721	21.8
444.namd	8	606	106	<u>606</u>	<u>106</u>	607	106	8	<u>603</u>	<u>106</u>	604	106	602	107
447.dealII	8	<u>702</u>	<u>130</u>	752	122	701	131	8	734	125	678	135	<u>683</u>	<u>134</u>
450.soplex	8	<u>1991</u>	<u>33.5</u>	1988	33.6	1996	33.4	8	1793	37.2	1789	37.3	<u>1792</u>	<u>37.2</u>
453.povray	8	254	168	<u>254</u>	<u>168</u>	253	168	8	<u>217</u>	<u>196</u>	220	193	217	196
454.calculix	8	636	104	633	104	<u>634</u>	<u>104</u>	8	<u>452</u>	<u>146</u>	453	146	450	147
459.GemsFDTD	8	3467	24.5	3454	24.6	<u>3460</u>	<u>24.5</u>	8	3346	25.4	3354	25.3	<u>3352</u>	<u>25.3</u>
465.tonto	8	<u>711</u>	<u>111</u>	710	111	718	110	8	698	113	699	113	<u>698</u>	<u>113</u>
470.lbm	8	4165	26.4	4154	26.5	<u>4154</u>	<u>26.5</u>	4	2178	25.2	2170	25.3	<u>2171</u>	<u>25.3</u>
481.wrf	8	1727	51.7	1735	51.5	<u>1733</u>	<u>51.6</u>	8	1732	51.6	<u>1730</u>	<u>51.6</u>	1728	51.7
482.sphinx3	8	<u>2846</u>	<u>54.8</u>	2846	54.8	2847	54.8	4	1472	52.9	<u>1467</u>	<u>53.2</u>	1463	53.3

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

Base Compiler Invocation

C benchmarks:
icc

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 64.1

IBM BladeCenter HS21 XM (Intel Xeon E5420)

SPECfp_rate_base2006 = 62.0

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

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

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 64.1

IBM BladeCenter HS21 XM (Intel Xeon E5420)

SPECfp_rate_base2006 = 62.0

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

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.deall: -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
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 64.1

IBM BladeCenter HS21 XM (Intel Xeon E5420)

SPECfp_rate_base2006 = 62.0

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

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.20090714.11.html>



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 64.1

IBM BladeCenter HS21 XM (Intel Xeon E5420)

SPECfp_rate_base2006 = 62.0

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

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.20090714.11.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 16:16:36 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 February 2008.