SPEC® CFP2006 Result

IBM Corporation

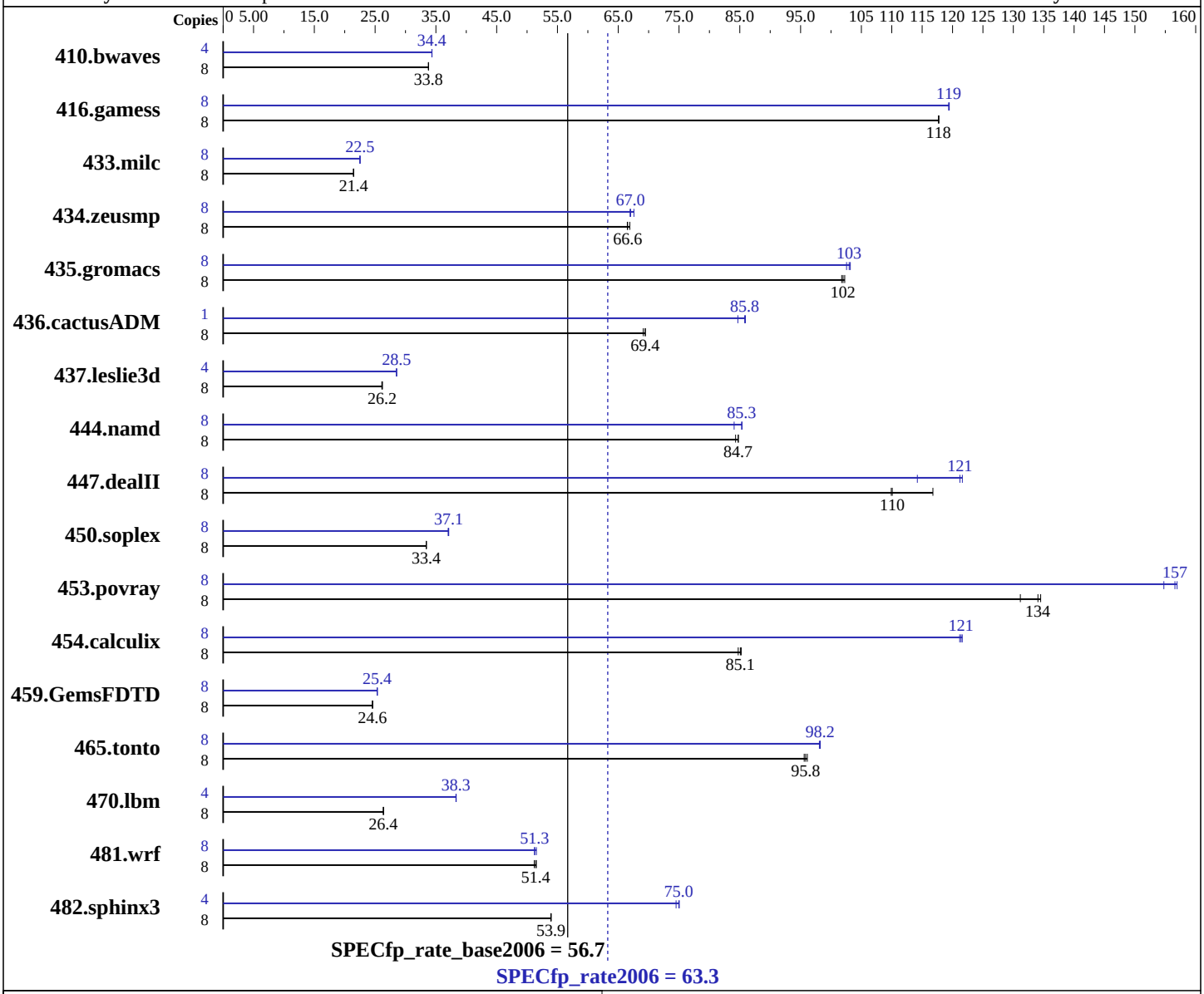
IBM BladeCenter HS21 XM (Intel Xeon E5405)

SPECfp®_rate2006 = 63.3

SPECfp_rate_base2006 = 56.7

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Dec-2007
Hardware Availability: Jan-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E5405
CPU Characteristics:	1333MHz system bus
CPU MHz:	1995
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

IBM Corporation

IBM BladeCenter HS21 XM (Intel Xeon E5405)

SPECfp_rate2006 = 63.3

SPECfp_rate_base2006 = 56.7

CPU2006 license: 11
Test sponsor: IBM Corporation
Tested by: IBM Corporation

Test date: Dec-2007
Hardware Availability: Jan-2008
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: 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	3219	33.8	**3218**	**33.8**	3217	33.8	4	1582	34.4	**1582**	**34.4**	1583	34.3
416.gamess	8	**1331**	**118**	1331	118	1330	118	8	**1312**	**119**	1311	119	1312	119
433.milc	8	**3424**	**21.4**	3425	21.4	3419	21.5	8	3260	22.5	3265	22.5	**3260**	**22.5**
434.zeusmp	8	1095	66.5	1088	66.9	**1094**	**66.6**	8	**1086**	**67.0**	1077	67.6	1088	66.9
435.gromacs	8	559	102	561	102	**560**	**102**	8	**555**	**103**	557	103	554	103
436.cactusADM	8	1383	69.1	1376	69.5	**1377**	**69.4**	1	139	85.9	141	84.7	**139**	**85.8**
437.leslie3d	8	2880	26.1	**2874**	**26.2**	2870	26.2	4	1320	28.5	1318	28.5	**1318**	**28.5**
444.namd	8	761	84.3	757	84.8	**757**	**84.7**	8	**752**	**85.3**	763	84.1	752	85.4
447.dealII	8	**831**	**110**	833	110	784	117	8	**755**	**121**	753	122	801	114
450.soplex	8	1997	33.4	1996	33.4	**1996**	**33.4**	8	1798	37.1	**1799**	**37.1**	1803	37.0
453.povray	8	325	131	316	134	**318**	**134**	8	**272**	**157**	275	155	271	157
454.calculix	8	**776**	**85.1**	774	85.2	779	84.7	8	543	122	545	121	**544**	**121**
459.GemsFDTD	8	3457	24.6	3451	24.6	**3455**	**24.6**	8	**3348**	**25.4**	3348	25.3	3348	25.4
465.tonto	8	819	96.1	824	95.6	**821**	**95.8**	8	803	98.1	801	98.2	**802**	**98.2**
470.lbm	8	4170	26.4	**4168**	**26.4**	4168	26.4	4	1433	38.3	**1435**	**38.3**	1435	38.3
481.wrf	8	1746	51.2	**1738**	**51.4**	1734	51.5	8	1745	51.2	**1743**	**51.3**	1734	51.5
482.sphinx3	8	2889	54.0	**2891**	**53.9**	2892	53.9	4	**1040**	**75.0**	1046	74.5	1039	75.0

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

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

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.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`

Continued on next page

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.dealII: -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

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`

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 16:27:29 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 February 2008.