SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

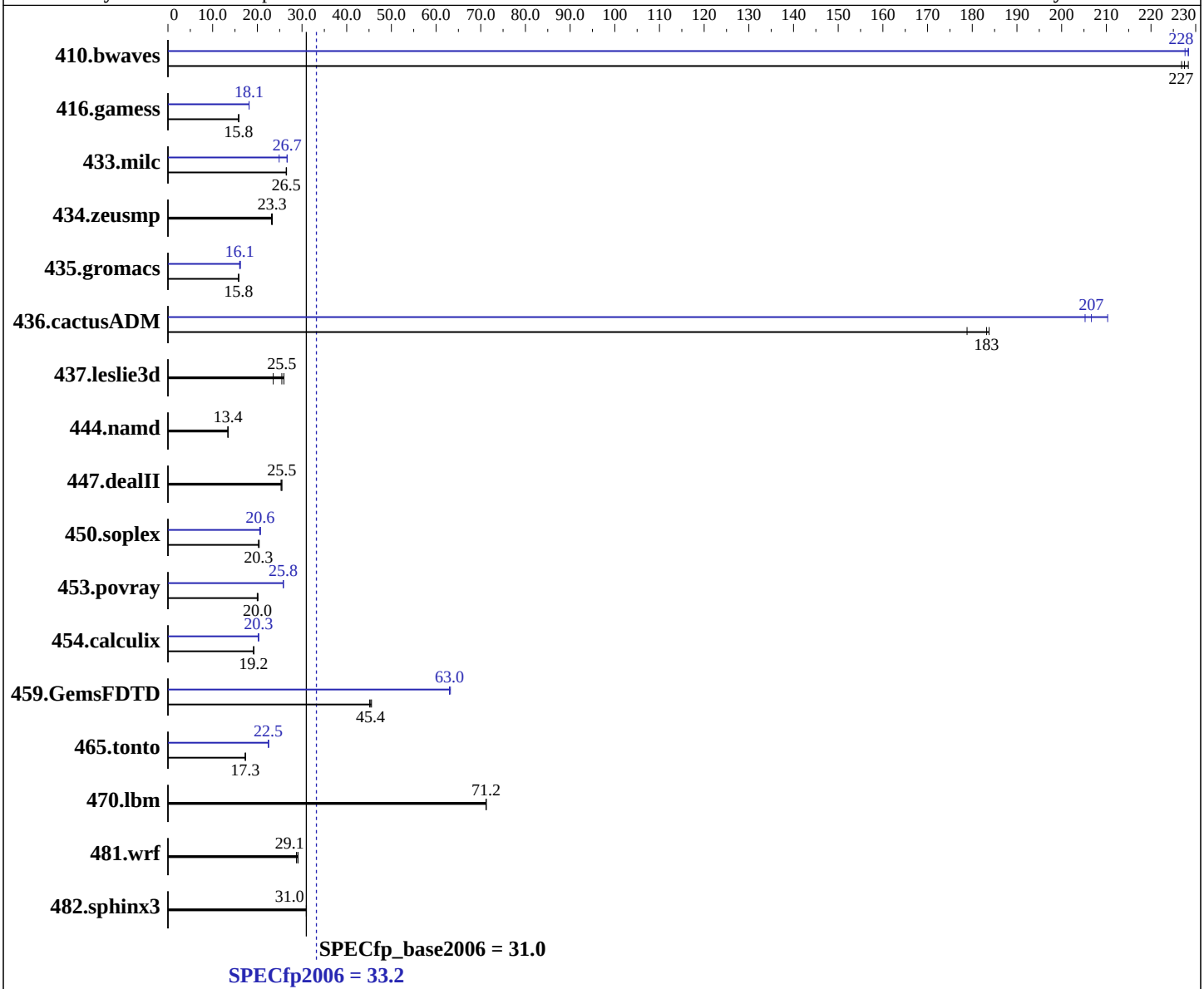
IBM System x3690 X5 (Intel Xeon E6540)

SPECfp®2006 = 33.2

SPECfp_base2006 = 31.0

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

Test date: Aug-2010
Hardware Availability: Aug-2010
Software Availability: Jan-2010



Hardware

CPU Name:	Intel Xeon E6540
CPU Characteristics:	Intel Turbo Boost Technology up to 2.27 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

Continued on next page

Software

Operating System:	SuSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler:	Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel:	Yes
File System:	ext3
System State:	Run level 3 (multi-user)

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3690 X5 (Intel Xeon E6540)

SPECfp2006 = 33.2

SPECfp_base2006 = 31.0

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

Test date: Aug-2010
Hardware Availability: Aug-2010
Software Availability: Jan-2010

L3 Cache: 18 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (32 x 4 GB PC3-8500R CL7, Quad Rank)
Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	59.9	227	59.5	228	**59.7**	**227**	59.5	228	59.7	228	**59.5**	**228**
416.gamess	1234	15.9	1242	15.8	**1236**	**15.8**	1078	18.2	**1079**	**18.1**	1079	18.1
433.milc	347	26.5	346	26.5	**347**	**26.5**	344	26.7	**344**	**26.7**	369	24.9
434.zeusmp	393	23.2	**390**	**23.3**	389	23.4	393	23.2	**390**	**23.3**	389	23.4
435.gromacs	**451**	**15.8**	451	15.8	453	15.8	440	16.2	**444**	**16.1**	445	16.0
436.cactusADM	65.0	184	66.8	179	**65.2**	**183**	56.8	210	**57.8**	**207**	58.2	205
437.leslie3d	399	23.6	**369**	**25.5**	362	26.0	399	23.6	**369**	**25.5**	362	26.0
444.namd	**596**	**13.4**	599	13.4	596	13.5	**596**	**13.4**	599	13.4	596	13.5
447.dealII	452	25.3	449	25.5	**449**	**25.5**	452	25.3	449	25.5	**449**	**25.5**
450.soplex	**411**	**20.3**	411	20.3	408	20.4	403	20.7	406	20.5	**404**	**20.6**
453.povray	264	20.2	**266**	**20.0**	266	20.0	206	25.8	206	25.8	**206**	**25.8**
454.calculix	**430**	**19.2**	431	19.1	429	19.2	**407**	**20.3**	407	20.3	408	20.2
459.GemsFDTD	**234**	**45.4**	235	45.1	233	45.6	168	63.0	168	63.2	**168**	**63.0**
465.tonto	**568**	**17.3**	566	17.4	570	17.3	437	22.5	**438**	**22.5**	438	22.5
470.lbm	193	71.2	193	71.2	**193**	**71.2**	193	71.2	193	71.2	**193**	**71.2**
481.wrf	**384**	**29.1**	389	28.7	384	29.1	**384**	**29.1**	389	28.7	384	29.1
482.sphinx3	**629**	**31.0**	629	31.0	630	31.0	**629**	**31.0**	629	31.0	630	31.0

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

Operating System Notes

```
echo 1 > /proc/sys/vm/zone_reclaim_mode
```

Platform Notes

```
Turbo Boost set to Traditional
```

General Notes

```
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
```

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

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:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Peak Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: basepeak = yes

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -opt-malloc-options=3 -auto-ilp32

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -parallel

Continued on next page

Peak Optimization Flags (Continued)

416.gamess: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-unroll2 -Ob0 -opt-prefetch -parallel`

465.tonto: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-inline-calloc -opt-malloc-options=3 -auto -unroll4`

Benchmarks using both Fortran and C:

435.gromacs: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-opt-prefetch -auto-ilp32`

436.cactusADM: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2) `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2) `-unroll2 -opt-prefetch -parallel -auto-ilp32`

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: `basepeak = yes`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.00.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.00.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 v1.1.
Report generated on Wed Jul 23 12:57:52 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 September 2010.