SPEC® CFP2006 Result

IBM Corporation

IBM System x3550 M3 (Intel Xeon E5520)

$SPECfp^{®}2006 =$ 34.3

$SPECfp\_base2006 =$ 31.9

CPU2006 license: 11		**Test date:**	Jun-2010
Test sponsor: IBM Corporation		**Hardware Availability:**	Jun-2010
Tested by: IBM Corporation		**Software Availability:**	Jan-2010

Benchmark	Blue (peak)	Black (base)
410.bwaves	153	153
416.gamess	20.4	18.3
433.milc	38.1	39.5
434.zeusmp		28.2
435.gromacs	18.0	17.9
436.cactusADM	163	144
437.leslie3d		24.8
444.namd	15.0	15.1
447.dealII	30.2	29.5
450.soplex	24.6	24.1
453.povray	29.1	22.3
454.calculix	23.1	22.1
459.GemsFDTD	56.2	35.9
465.tonto	25.2	19.8
470.lbm	46.2	45.6
481.wrf	36.6	33.3
482.sphinx3	28.9	33.0

SPECfp_base2006 = 31.9

SPECfp2006 = 34.3

Hardware

CPU Name:	Intel Xeon E5520
CPU Characteristics:	Intel Turbo Boost Technology up to 2.53 GHz
CPU MHz:	2267
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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 x3550 M3 (Intel Xeon E5520)

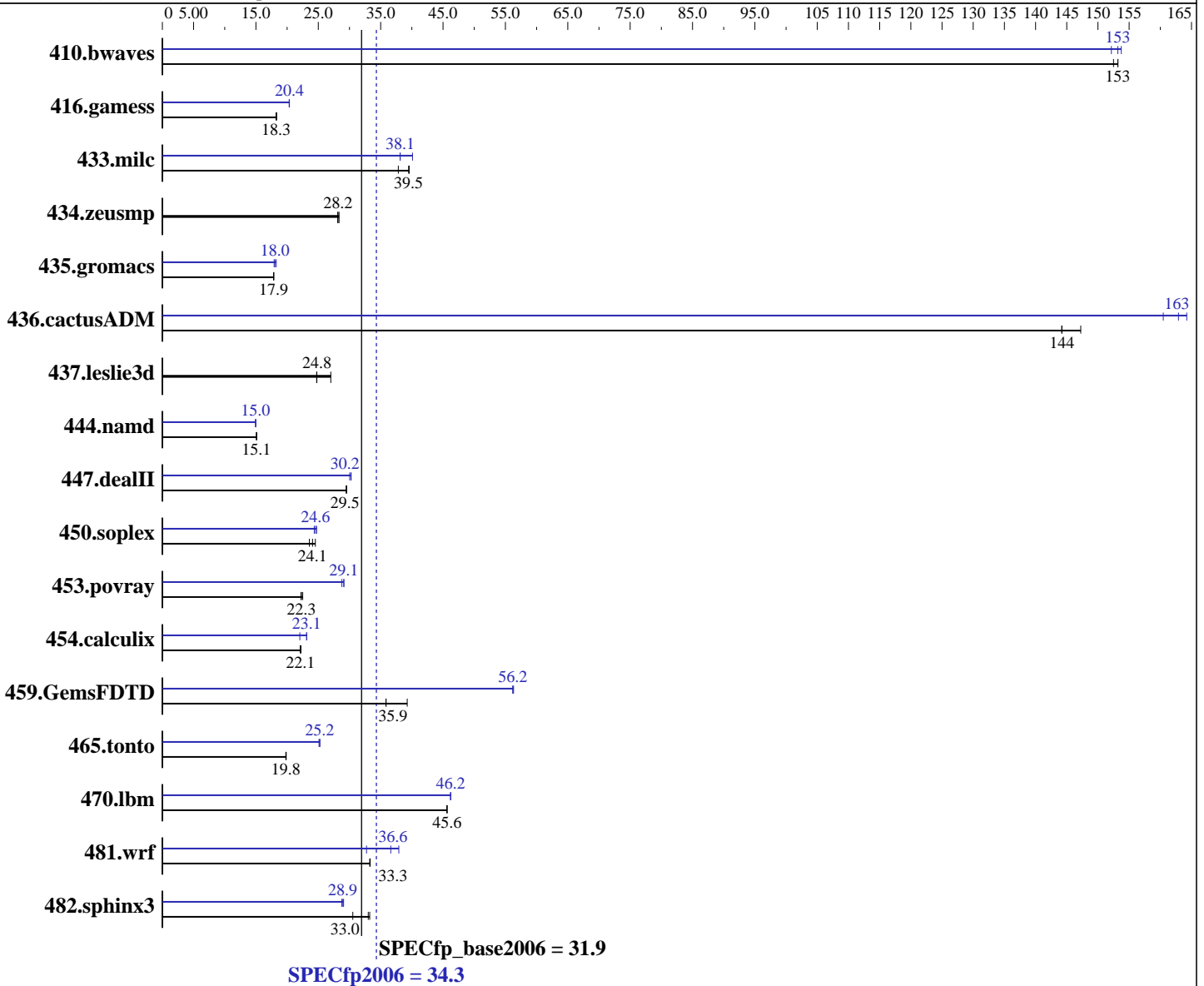| SPECfp2006 =	34.3
SPECfp_base2006 =	31.9

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

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

L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12 x 4 GB PC3-10600R CL9, 2 Rank)
Disk Subsystem:	1 x 73 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	89.1	152	**88.7**	**153**	88.7	153	89.3	152	**88.7**	**153**	88.4	154
416.gamess	1069	18.3	1073	18.3	**1072**	**18.3**	961	20.4	**961**	**20.4**	963	20.3
433.milc	243	37.8	232	39.6	**233**	**39.5**	229	40.1	241	38.1	**241**	**38.1**
434.zeusmp	324	28.1	321	28.3	**323**	**28.2**	324	28.1	321	28.3	**323**	**28.2**
435.gromacs	400	17.9	401	17.8	**400**	**17.9**	**396**	**18.0**	391	18.3	398	17.9
436.cactusADM	82.9	144	81.2	147	**82.9**	**144**	**73.4**	**163**	74.5	160	72.8	164
437.leslie3d	**379**	**24.8**	380	24.7	348	27.0	**379**	**24.8**	380	24.7	348	27.0
444.namd	**531**	**15.1**	532	15.1	531	15.1	**536**	**15.0**	536	15.0	536	15.0
447.dealII	388	29.5	388	29.5	**388**	**29.5**	381	30.0	378	30.3	**378**	**30.2**
450.soplex	354	23.6	340	24.5	**346**	**24.1**	342	24.4	337	24.7	**339**	**24.6**
453.povray	239	22.2	**239**	**22.3**	236	22.5	183	29.1	185	28.8	**183**	**29.1**
454.calculix	371	22.2	373	22.1	**373**	**22.1**	356	23.2	374	22.0	**357**	**23.1**
459.GemsFDTD	**296**	**35.9**	296	35.8	270	39.3	189	56.2	**189**	**56.2**	188	56.3
465.tonto	497	19.8	**497**	**19.8**	495	19.9	392	25.1	390	25.2	**390**	**25.2**
470.lbm	301	45.7	301	45.6	**301**	**45.6**	297	46.2	**297**	**46.2**	297	46.2
481.wrf	336	33.3	**336**	**33.3**	335	33.3	**305**	**36.6**	295	37.9	341	32.7
482.sphinx3	**590**	**33.0**	638	30.5	586	33.2	**673**	**28.9**	677	28.8	671	29.1

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

Platform Notes

```
    Turbo Mode Enable
    Turbo Boost set to Traditional
    CPU C State Enable
```

General Notes

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

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3550 M3 (Intel Xeon E5520)

$\text{SPECfp2006} = \quad 34.3$

$\text{SPECfp\_base2006} = \quad 31.9$

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

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

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
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3550 M3 (Intel Xeon E5520)

$SPECfp2006 =$ 34.3

$SPECfp\_base2006 =$ 31.9

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

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

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: -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)
          -parallel -ansi-alias -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
          -unroll2
```

C++ benchmarks:

```
444.namd: -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)
          -fno-alias -auto-ilp32

447.dealII: -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 -ansi-alias -scalar-rep- -auto-ilp32

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
```

IBM Corporation

IBM System x3550 M3 (Intel Xeon E5520)

$SPECfp2006 = $ 34.3

$SPECfp_base2006 = $ 31.9

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

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

Peak Optimization Flags (Continued)

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`

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: `Same as 454.calculix`

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.20100804.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.20100804.xml

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM System x3550 M3 (Intel Xeon E5520)

$SPECfp2006 =$ 34.3

$SPECfp\_base2006 =$ 31.9

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

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

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 10:35:27 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 August 2010.