SPEC® CFP2006 Result

IBM Corporation

IBM BladeCenter HX5 (Intel Xeon E7530)

$SPECfp^{®}2006 =$ 32.0

$SPECfp\_base2006 =$ 29.5

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

Results chart, scale 0 to 320:

Benchmark	Peak	Base
410.bwaves	318	317
416.gamess	17.1	14.2
433.milc	24.8	24.7
434.zeusmp	20.0	
435.gromacs	15.2	14.9
436.cactusADM	272	263
437.leslie3d		22.2
444.namd		12.7
447.dealII		23.9
450.soplex	17.2	16.9
453.povray	24.4	18.8
454.calculix	19.0	17.3
459.GemsFDTD	64.6	42.8
465.tonto	21.1	15.9
470.lbm	61.8	61.6
481.wrf	25.8	24.7
482.sphinx3	29.0	

SPECfp_base2006 = 29.5

SPECfp2006 = 32.0
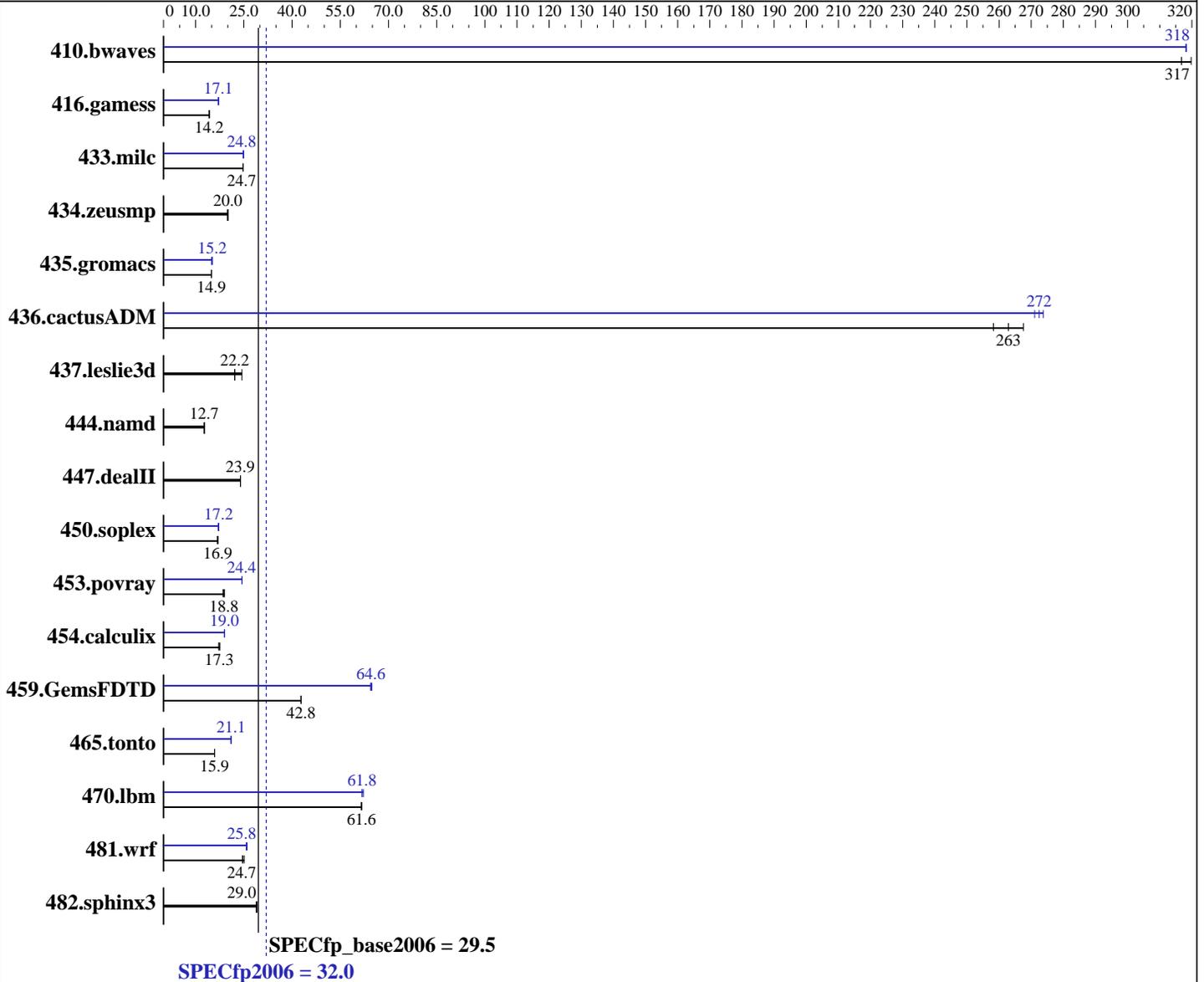
Hardware

CPU Name:	Intel Xeon E7530
CPU Characteristics:	Intel Turbo Boost Technology up to 2.13 GHz
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	24 cores, 4 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1,2,3,4 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 BladeCenter HX5 (Intel Xeon E7530)

SPECfp2006 =	32.0
SPECfp_base2006 =	29.5

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

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

L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	256 GB (32 x 8 GB PC3-8500R CL7, Quad Rank, running at 978 MHz)
Disk Subsystem:	2 x 50 GB SATA, SSD, RAID 0
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	42.9	317	**42.9**	**317**	42.5	320	42.7	318	42.7	318	**42.7**	**318**
416.gamess	**1374**	**14.2**	1373	14.3	1377	14.2	1149	17.0	1142	17.2	**1143**	**17.1**
433.milc	371	24.7	**371**	**24.7**	370	24.8	370	24.8	368	25.0	**370**	**24.8**
434.zeusmp	457	19.9	**455**	**20.0**	452	20.1	457	19.9	**455**	**20.0**	452	20.1
435.gromacs	479	14.9	478	14.9	**479**	**14.9**	469	15.2	478	14.9	**470**	**15.2**
436.cactusADM	44.7	268	**45.5**	**263**	46.3	258	**43.9**	**272**	44.1	271	43.7	274
437.leslie3d	**423**	**22.2**	385	24.4	425	22.1	**423**	**22.2**	385	24.4	425	22.1
444.namd	**631**	**12.7**	631	12.7	632	12.7	**631**	**12.7**	631	12.7	632	12.7
447.dealII	**478**	**23.9**	478	23.9	477	24.0	**478**	**23.9**	478	23.9	477	24.0
450.soplex	490	17.0	498	16.8	**493**	**16.9**	**485**	**17.2**	490	17.0	484	17.2
453.povray	287	18.5	281	18.9	**283**	**18.8**	218	24.5	218	24.4	**218**	**24.4**
454.calculix	470	17.6	**476**	**17.3**	481	17.1	434	19.0	435	19.0	**434**	**19.0**
459.GemsFDTD	248	42.8	248	42.8	**248**	**42.8**	165	64.4	164	64.8	**164**	**64.6**
465.tonto	**618**	**15.9**	618	15.9	618	15.9	**467**	**21.1**	466	21.1	469	21.0
470.lbm	223	61.6	**223**	**61.6**	223	61.6	**222**	**61.8**	222	61.8	221	62.2
481.wrf	445	25.1	**453**	**24.7**	454	24.6	429	26.0	**433**	**25.8**	434	25.7
482.sphinx3	**673**	**29.0**	670	29.1	676	28.8	**673**	**29.0**	670	29.1	676	28.8

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
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM BladeCenter HX5 (Intel Xeon E7530)

$SPECfp2006 = 32.0$

$SPECfp\_base2006 = 29.5$

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

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

General Notes (Continued)

```
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
```

IBM Corporation

IBM BladeCenter HX5 (Intel Xeon E7530)

$SPECfp2006 =$ 32.0

$SPECfp\_base2006 =$ 29.5

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

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

Base Optimization Flags (Continued)

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: `-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: 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`

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM BladeCenter HX5 (Intel Xeon E7530)

$SPECfp2006 = $ 32.0

$SPECfp_base2006 = $ 29.5

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

Test date: Aug-2010
Hardware Availability: Jul-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.20100603.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.20100603.xml

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

IBM BladeCenter HX5 (Intel Xeon E7530)

SPECfp2006 = 32.0

SPECfp_base2006 = 29.5

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 12:19:13 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 31 August 2010.