SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation
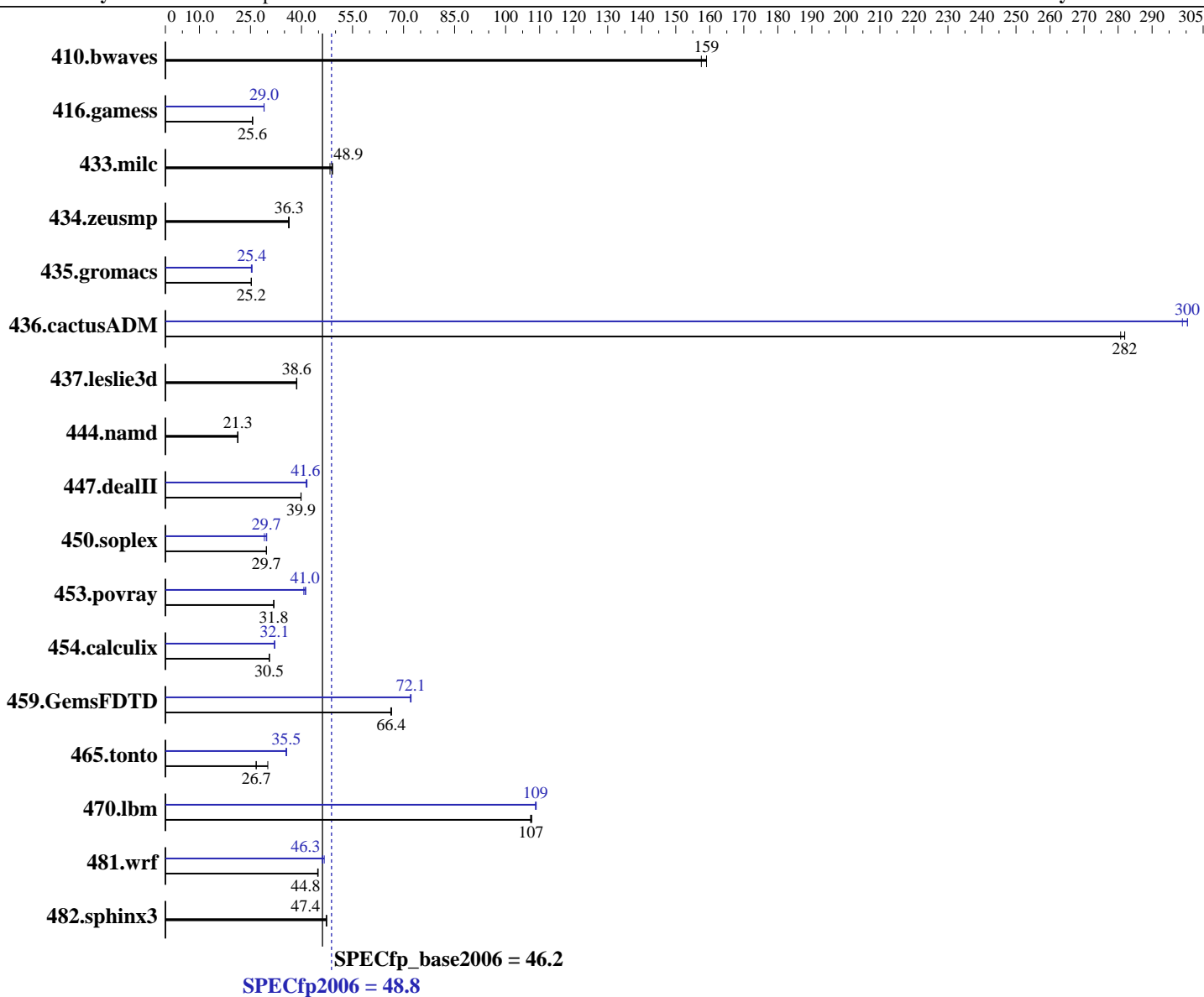
Express5800/R120b-1
(Intel Xeon X5680)

$SPECfp^{®}2006 =$ **48.8**

$SPECfp\_base2006 =$ **46.2**

CPU2006 license:	9006	**Test date:**	Sep-2010
Test sponsor:	NEC Corporation	**Hardware Availability:**	Sep-2010
Tested by:	NEC Corporation	**Software Availability:**	Dec-2009

410.bwaves 159
416.gamess 29.0 / 25.6
433.milc 48.9
434.zeusmp 36.3
435.gromacs 25.4 / 25.2
436.cactusADM 300 / 282
437.leslie3d 38.6
444.namd 21.3
447.dealII 41.6 / 39.9
450.soplex 29.7 / 29.7
453.povray 41.0 / 31.8
454.calculix 32.1 / 30.5
459.GemsFDTD 72.1 / 66.4
465.tonto 35.5 / 26.7
470.lbm 109 / 107
481.wrf 46.3 / 44.8
482.sphinx3 47.4

SPECfp_base2006 = 46.2

SPECfp2006 = 48.8

Hardware

CPU Name:	Intel Xeon X5680
CPU Characteristics:	Intel Turbo Boost Technology up to 3.60 GHz
CPU MHz:	3333
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip
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

NEC Corporation

Express5800/R120b-1
(Intel Xeon X5680)

SPECfp2006 =	48.8
SPECfp_base2006 =	46.2

L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (12 x 8 GB PC3L-10600R, 2 rank, CL9, ECC)
Disk Subsystem:	1x160 GB SATA, 7200 RPM
Other Hardware:	None
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	86.3	158	85.4	159	**85.5**	**159**	86.3	158	85.4	159	**85.5**	**159**
416.gamess	**765**	**25.6**	764	25.6	765	25.6	**675**	**29.0**	676	29.0	675	29.0
433.milc	190	48.4	187	49.2	**188**	**48.9**	190	48.4	187	49.2	**188**	**48.9**
434.zeusmp	250	36.4	**250**	**36.3**	251	36.2	250	36.4	**250**	**36.3**	251	36.2
435.gromacs	282	25.3	283	25.2	**283**	**25.2**	281	25.4	**281**	**25.4**	283	25.3
436.cactusADM	42.6	281	42.4	282	**42.4**	**282**	39.8	300	**39.8**	**300**	40.0	299
437.leslie3d	244	38.5	243	38.6	**244**	**38.6**	244	38.5	243	38.6	**244**	**38.6**
444.namd	377	21.3	**377**	**21.3**	377	21.3	377	21.3	**377**	**21.3**	377	21.3
447.dealII	287	39.8	287	39.9	**287**	**39.9**	275	41.6	**275**	**41.6**	277	41.4
450.soplex	281	29.7	**281**	**29.7**	280	29.7	287	29.1	280	29.8	**281**	**29.7**
453.povray	**167**	**31.8**	167	31.8	167	31.9	**130**	**41.0**	131	40.7	129	41.3
454.calculix	270	30.5	270	30.6	**270**	**30.5**	**257**	**32.1**	257	32.1	257	32.1
459.GemsFDTD	**160**	**66.4**	160	66.5	160	66.2	**147**	**72.1**	147	72.2	147	72.0
465.tonto	**369**	**26.7**	369	26.7	327	30.1	276	35.6	277	35.5	**277**	**35.5**
470.lbm	128	108	**128**	**107**	128	107	126	109	**126**	**109**	126	109
481.wrf	249	44.9	**249**	**44.8**	250	44.7	242	46.2	**242**	**46.3**	239	46.7
482.sphinx3	**412**	**47.4**	411	47.4	413	47.2	**412**	**47.4**	411	47.4	413	47.2

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Platform Notes

```
BIOS setting:
Hyper-Threading Technology: Disabled
Performance/Watt: Traditional
Server Class: Custom
Data Reuse Optimization: Disabled
Memory Voltage: Normal
NUMA configuration: Disabled
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/R120b-1
(Intel Xeon X5680)

$SPECfp2006 =$ 48.8

$SPECfp\_base2006 =$ 46.2

CPU2006 license: 9006	**Test date:** Sep-2010
Test sponsor: NEC Corporation	**Hardware Availability:** Sep-2010
Tested by: NEC Corporation	**Software Availability:** Dec-2009

General Notes

```
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
The Express5800/R120b-1 and
the Express5800/R120b-2 models are electronically equivalent.
The results have been measured on the Express5800/R120b-1 model.
```

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
```

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/R120b-1
(Intel Xeon X5680)

SPECfp2006 =	48.8
SPECfp_base2006 =	46.2

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Sep-2010

Hardware Availability: Sep-2010

Software Availability: Dec-2009

Base Optimization Flags (Continued)

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: basepeak = yes

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
```

Continued on next page

NEC Corporation

Express5800/R120b-1
(Intel Xeon X5680)

$SPECfp2006 =$ 48.8

$SPECfp\_base2006 =$ 46.2

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Sep-2010

Hardware Availability: Sep-2010

Software Availability: Dec-2009

Peak Optimization Flags (Continued)

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`

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: `basepeak = yes`

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.20100929.01.html`

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/R120b-1
(Intel Xeon X5680)

$SPECfp2006 =$ 48.8

$SPECfp\_base2006 =$ 46.2

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Sep-2010
Hardware Availability: Sep-2010
Software Availability: Dec-2009

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100929.01.xml

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 13:04:42 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 September 2010.