SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

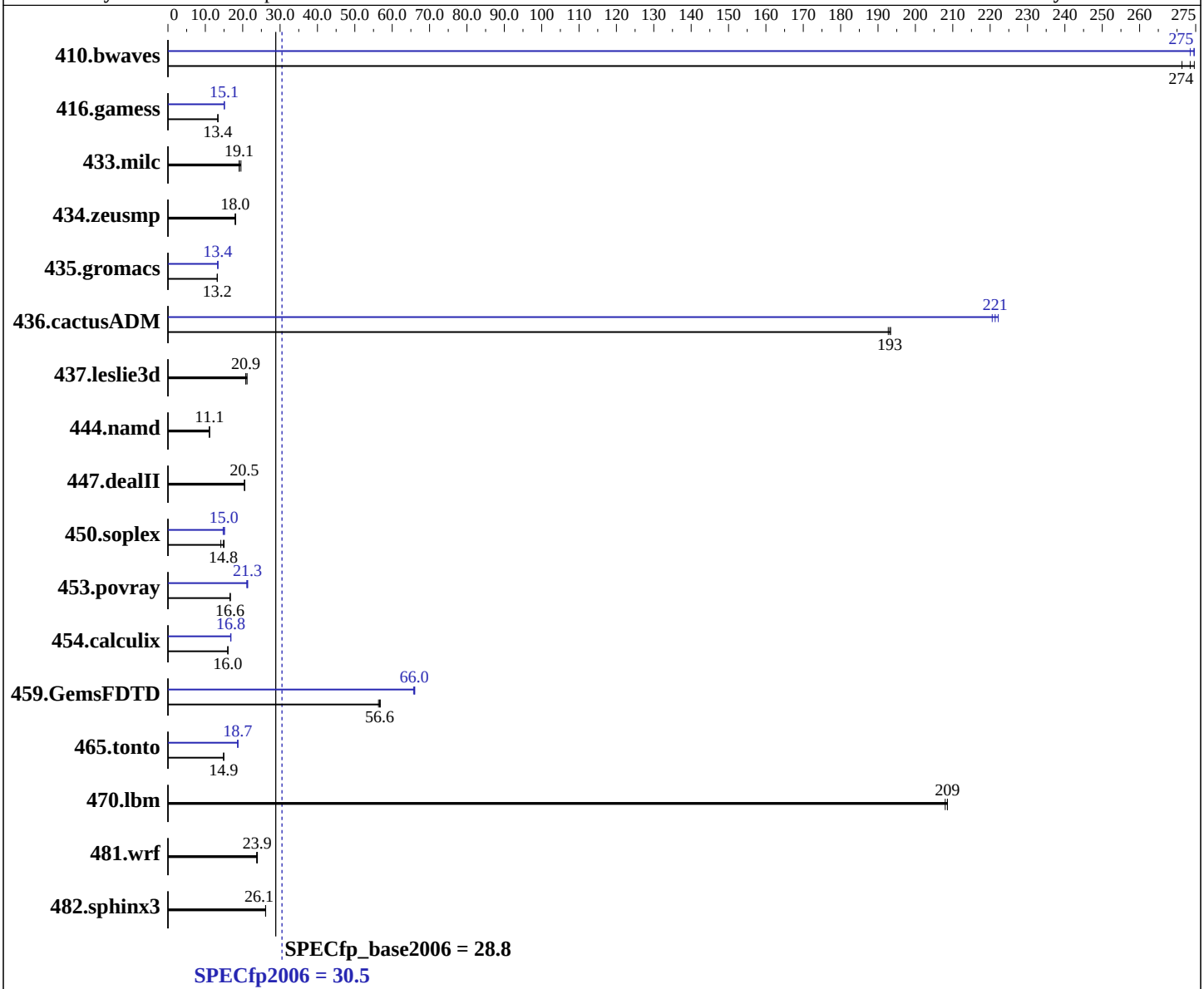
Express5800/R140b-4
(Intel Xeon E7520)

SPECfp®2006 = 30.5

SPECfp_base2006 = 28.8

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

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



Hardware

CPU Name:	Intel Xeon E7520
CPU Characteristics:	
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	2,4 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

NEC Corporation

Express5800/R140b-4
(Intel Xeon E7520)

SPECfp2006 = 30.5

SPECfp_base2006 = 28.8

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

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

L3 Cache: 18 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (64 x 4 GB PC3-10600R, 2 rank, CL9, ECC, running at 800 MHz)
Disk Subsystem: 1x300 GB SAS, 10000 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	50.1	271	49.5	275	**49.7**	**274**	49.5	275	**49.5**	**275**	49.7	274
416.gamess	1467	13.3	1464	13.4	**1466**	**13.4**	1298	15.1	1299	15.1	**1298**	**15.1**
433.milc	470	19.5	**481**	**19.1**	481	19.1	470	19.5	**481**	**19.1**	481	19.1
434.zeusmp	502	18.1	506	18.0	**505**	**18.0**	502	18.1	506	18.0	**505**	**18.0**
435.gromacs	540	13.2	**541**	**13.2**	541	13.2	534	13.4	**535**	**13.4**	537	13.3
436.cactusADM	61.8	193	62.0	193	**61.9**	**193**	53.8	222	54.2	221	**54.0**	**221**
437.leslie3d	451	20.8	**451**	**20.9**	444	21.2	451	20.8	**451**	**20.9**	444	21.2
444.namd	725	11.1	721	11.1	**721**	**11.1**	725	11.1	721	11.1	**721**	**11.1**
447.dealII	**558**	**20.5**	558	20.5	558	20.5	**558**	**20.5**	558	20.5	558	20.5
450.soplex	589	14.1	554	15.0	**562**	**14.8**	565	14.8	550	15.2	**557**	**15.0**
453.povray	318	16.7	**320**	**16.6**	320	16.6	249	21.3	**250**	**21.3**	252	21.1
454.calculix	515	16.0	514	16.0	**515**	**16.0**	492	16.8	490	16.8	**490**	**16.8**
459.GemsFDTD	187	56.8	188	56.3	**187**	**56.6**	**161**	**66.0**	161	66.1	161	65.7
465.tonto	660	14.9	661	14.9	**660**	**14.9**	528	18.6	**526**	**18.7**	526	18.7
470.lbm	66.1	208	65.9	209	**65.9**	**209**	66.1	208	65.9	209	**65.9**	**209**
481.wrf	467	23.9	**468**	**23.9**	471	23.7	467	23.9	**468**	**23.9**	471	23.7
482.sphinx3	746	26.1	745	26.2	**745**	**26.1**	746	26.1	745	26.2	**745**	**26.1**

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
NUMA Configuration: Disabled
Interleave Mode: 8 Way
```

General Notes

```
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
```

Continued on next page

Base Optimization Flags (Continued)

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: `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`

Continued on next page

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: 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-R140b.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-R140b.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 12:09:29 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 31 August 2010.