



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

Express5800/R140a-4  
(Intel Xeon E7430)

SPECfp<sup>®</sup>\_rate2006 = 59.3

SPECfp\_rate\_base2006 = 56.3

CPU2006 license: 9006

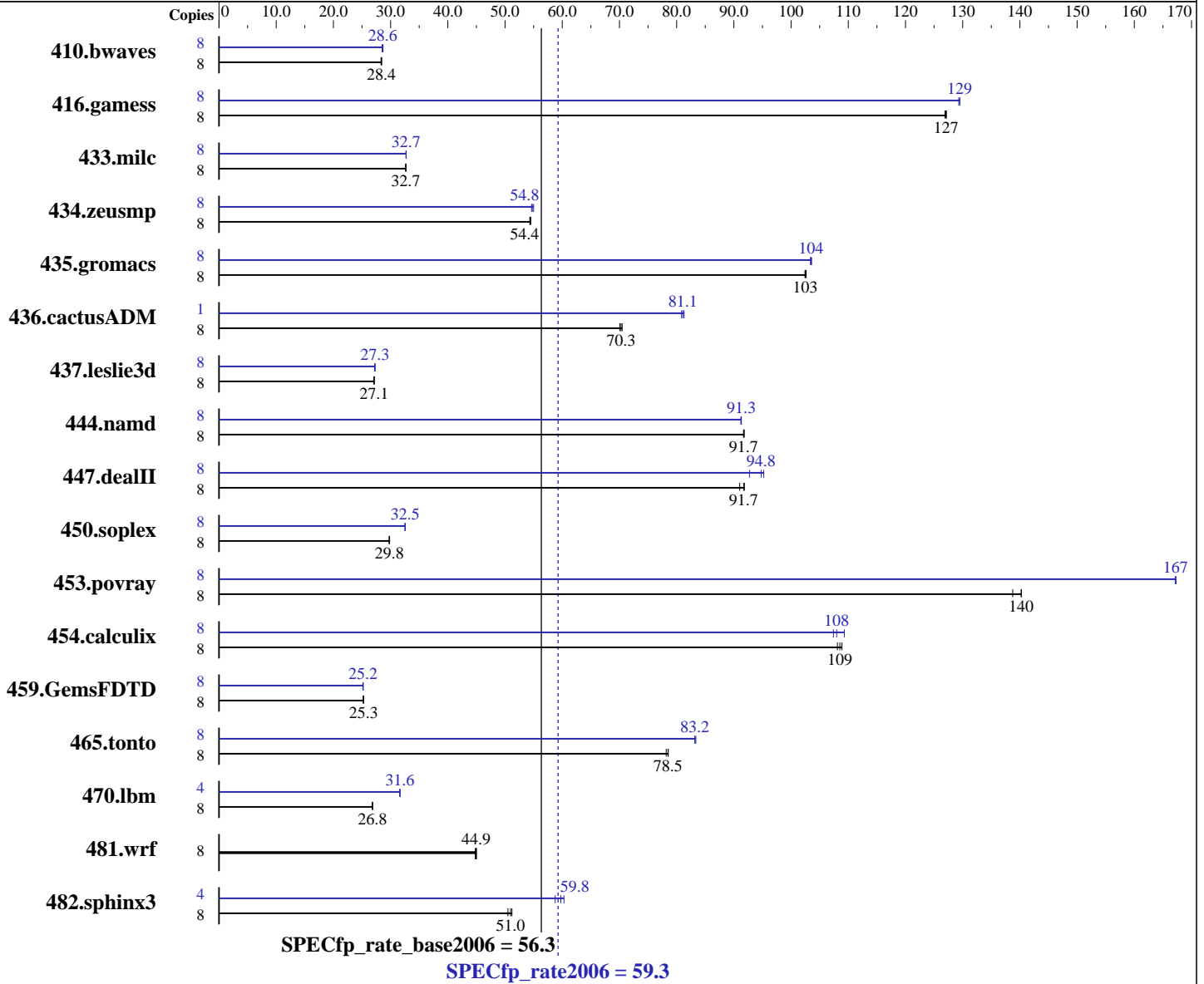
Test sponsor: NEC Corporation

Tested by: Bull SAS

Test date: Feb-2009

Hardware Availability: Nov-2008

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E7430  
 CPU Characteristics: 1066 MHz system bus  
 CPU MHz: 2133  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2,3,4 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 6 MB I+D on chip per chip, 3 MB shared / 2 cores

Continued on next page

### Software

Operating System: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042, l\_fproc\_b\_11.0.042  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

Express5800/R140a-4  
(Intel Xeon E7430)

SPECfp\_rate2006 = 59.3

SPECfp\_rate\_base2006 = 56.3

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: Bull SAS

Test date: Feb-2009

Hardware Availability: Nov-2008

Software Availability: Nov-2008

L3 Cache: 12 MB I+D on chip per chip  
Other Cache: None  
Memory: 32 GB (16 x 2GB DDR2-667 FBDIMM)  
Disk Subsystem: 1x146 GB SAS, 10000 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	<b>3829</b>	<b>28.4</b>	3822	28.4	3838	28.3	8	3813	28.5	3792	28.7	<b>3795</b>	<b>28.6</b>
416.gamess	8	1232	127	1234	127	<b>1233</b>	<b>127</b>	8	1210	129	<b>1210</b>	<b>129</b>	1211	129
433.milc	8	2251	32.6	<b>2248</b>	<b>32.7</b>	2248	32.7	8	2246	32.7	<b>2246</b>	<b>32.7</b>	2245	32.7
434.zeusmp	8	<b>1339</b>	<b>54.4</b>	1336	54.5	1340	54.3	8	1332	54.6	<b>1329</b>	<b>54.8</b>	1324	55.0
435.gromacs	8	558	102	556	103	<b>557</b>	<b>103</b>	8	551	104	553	103	<b>552</b>	<b>104</b>
436.cactusADM	8	1356	70.5	1364	70.1	<b>1360</b>	<b>70.3</b>	1	<b>147</b>	<b>81.1</b>	147	81.3	148	80.9
437.leslie3d	8	2769	27.2	2778	27.1	<b>2773</b>	<b>27.1</b>	8	2762	27.2	<b>2759</b>	<b>27.3</b>	2756	27.3
444.namd	8	699	91.8	<b>700</b>	<b>91.7</b>	700	91.7	8	703	91.2	<b>703</b>	<b>91.3</b>	703	91.3
447.dealII	8	996	91.8	1005	91.0	<b>998</b>	<b>91.7</b>	8	961	95.2	<b>966</b>	<b>94.8</b>	987	92.7
450.soplex	8	2244	29.7	<b>2240</b>	<b>29.8</b>	2237	29.8	8	2052	32.5	2050	32.5	<b>2050</b>	<b>32.5</b>
453.povray	8	<b>304</b>	<b>140</b>	303	140	307	139	8	254	167	<b>255</b>	<b>167</b>	255	167
454.calculix	8	611	108	<b>608</b>	<b>109</b>	606	109	8	<b>611</b>	<b>108</b>	614	107	604	109
459.GemsFDTD	8	3367	25.2	3358	25.3	<b>3360</b>	<b>25.3</b>	8	3375	25.2	<b>3369</b>	<b>25.2</b>	3368	25.2
465.tonto	8	1002	78.5	<b>1003</b>	<b>78.5</b>	1007	78.2	8	944	83.4	<b>946</b>	<b>83.2</b>	946	83.2
470.lbm	8	4098	26.8	<b>4097</b>	<b>26.8</b>	4097	26.8	4	<b>1738</b>	<b>31.6</b>	1737	31.6	1738	31.6
481.wrf	8	1995	44.8	<b>1988</b>	<b>44.9</b>	1985	45.0	8	1995	44.8	<b>1988</b>	<b>44.9</b>	1985	45.0
482.sphinx3	8	3045	51.2	<b>3059</b>	<b>51.0</b>	3087	50.5	4	1293	60.3	1327	58.8	<b>1305</b>	<b>59.8</b>

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

## Submit Notes

The config file option 'submit' was used.  
taskset was used to bind processes to cores except for 436.cactusADM peak  
For peak modules using 1/2 the number of available cores, copies were each assigned to a single L2 cache using mysubmit.pl script.  
See the flags description file for mysubmit.pl details.

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 64M



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

Express5800/R140a-4  
(Intel Xeon E7430)

**SPECfp\_rate2006 = 59.3**

**SPECfp\_rate\_base2006 = 56.3**

**CPU2006 license:** 9006

**Test sponsor:** NEC Corporation

**Tested by:** Bull SAS

**Test date:** Feb-2009

**Hardware Availability:** Nov-2008

**Software Availability:** Nov-2008

## Platform Notes

BIOS Settings:  
Adjacent Cache Line Prefetch = Disabled  
Hardware Prefetcher = Disabled  
High Bandwidth option = Enabled

## General Notes

The NEC Express5800/R140a-4(Intel Xeon E7430) and the Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) models are electronically equivalent. The results have been measured on a Bull NovaScale R480 E1(Intel Xeon E7430, 2.13 GHz) model.

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**NEC Corporation**

Express5800/R140a-4  
(Intel Xeon E7430)

**SPECfp\_rate2006 = 59.3**

**SPECfp\_rate\_base2006 = 56.3**

**CPU2006 license:** 9006

**Test sponsor:** NEC Corporation

**Tested by:** Bull SAS

**Test date:** Feb-2009

**Hardware Availability:** Nov-2008

**Software Availability:** Nov-2008

## Base Optimization Flags

C benchmarks:

`-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`

C++ benchmarks:

`-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`

Fortran benchmarks:

`-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`

Benchmarks using both Fortran and C:

`-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`

## Peak Compiler Invocation

C benchmarks (except as noted below):

`icc`

482.sphinx3: `/opt/intel/Compiler/11.0/042/bin/ia32/icc  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include`

C++ benchmarks (except as noted below):

`icpc`

450.soplex: `/opt/intel/Compiler/11.0/042/bin/ia32/icpc  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include`

Fortran benchmarks (except as noted below):

`ifort`

437.leslie3d: `/opt/intel/Compiler/11.0/042/bin/ia32/ifort  
-L/opt/intel/Compiler/11.0/042/ipp/ia32/lib  
-I/opt/intel/Compiler/11.0/042/ipp/ia32/include`

Benchmarks using both Fortran and C:

`icc ifort`

## Peak 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`

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**NEC Corporation**

Express5800/R140a-4  
(Intel Xeon E7430)

**SPECfp\_rate2006 = 59.3**

**SPECfp\_rate\_base2006 = 56.3**

**CPU2006 license:** 9006

**Test sponsor:** NEC Corporation

**Tested by:** Bull SAS

**Test date:** Feb-2009

**Hardware Availability:** Nov-2008

**Software Availability:** Nov-2008

## Peak Portability Flags (Continued)

```

436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
444.namd: -DSPEC_CPU_LP64
447.dealII: -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

```

## Peak Optimization Flags

C benchmarks:

```

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

```

```

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
        -auto-ilp32

```

```

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

```

C++ benchmarks:

```

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
         -no-prec-div -static -fno-alias -auto-ilp32

```

```

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
           -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

```

```

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

```

```

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

```

Fortran benchmarks:

```

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

```

```

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

```

```

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
           -no-prec-div -static

```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

**NEC Corporation**

Express5800/R140a-4  
(Intel Xeon E7430)

**SPECfp\_rate2006 = 59.3**

**SPECfp\_rate\_base2006 = 56.3**

**CPU2006 license:** 9006

**Test sponsor:** NEC Corporation

**Tested by:** Bull SAS

**Test date:** Feb-2009

**Hardware Availability:** Nov-2008

**Software Availability:** Nov-2008

## Peak Optimization Flags (Continued)

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

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

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

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

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

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.00.html>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.00.xml>

<http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.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](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.1.

Report generated on Tue Jul 22 23:36:21 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 1 April 2009.