



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

### SPECfp<sup>®</sup>\_rate2006 = 205

### Express5800/B120d (Intel Xeon E5-2450)

### SPECfp\_rate\_base2006 = 199

CPU2006 license: 9006

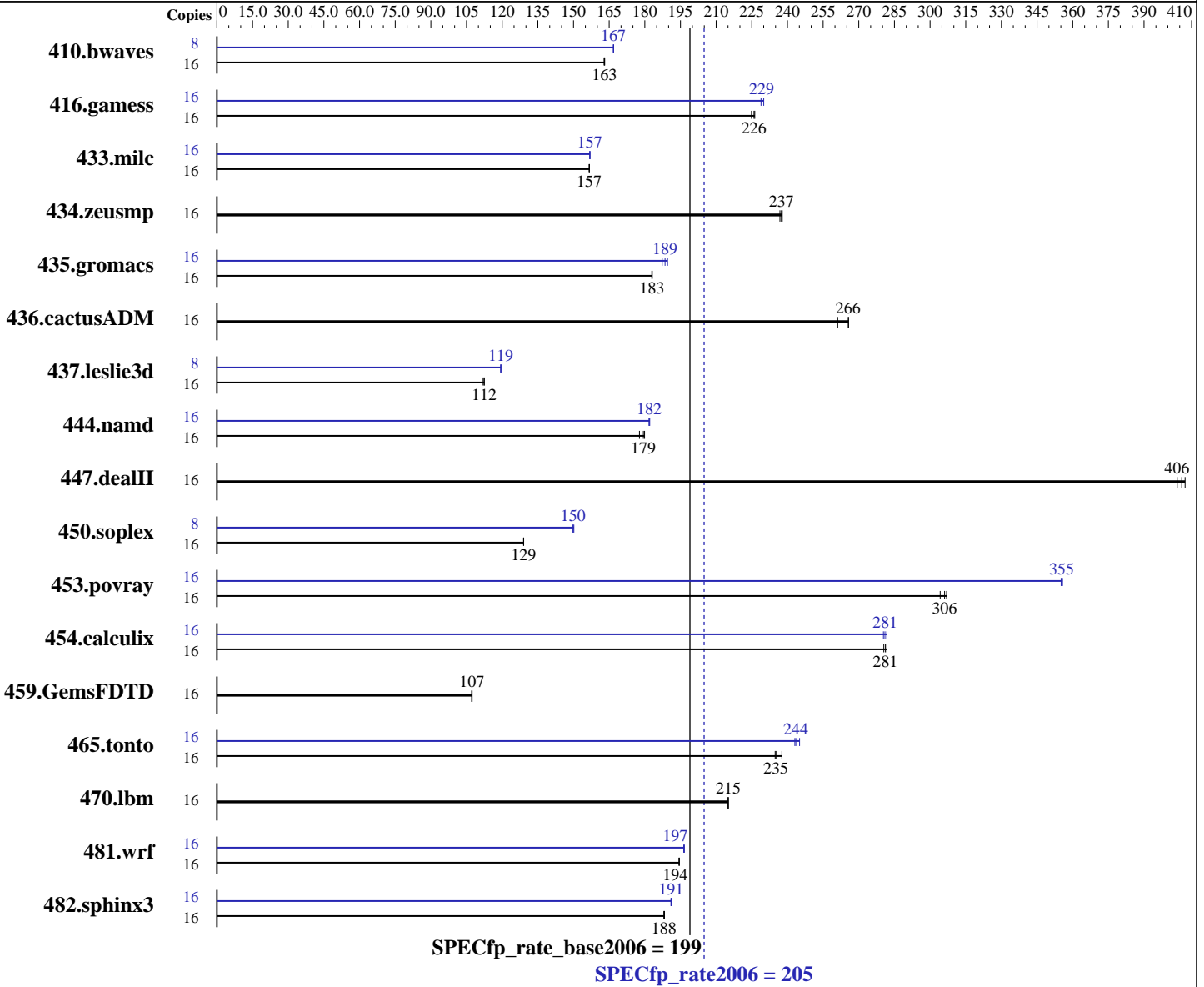
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Oct-2012

Hardware Availability: Oct-2012

Software Availability: Feb-2012



#### Hardware

CPU Name: Intel Xeon E5-2450  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.90 GHz  
 CPU MHz: 2100  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 1 chip, 8 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: Red Hat Enterprise Linux Server release 6.2 (Santiago)  
 Kernel 2.6.32-220.el6.x86\_64  
 Compiler: C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.3.293 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: ext4

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## NEC Corporation

SPECfp\_rate2006 = 205

### Express5800/B120d (Intel Xeon E5-2450)

SPECfp\_rate\_base2006 = 199

CPU2006 license: 9006

Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Oct-2012

Hardware Availability: Oct-2012

Software Availability: Feb-2012

L3 Cache: 20 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 48 GB (6 x 8 GB 2Rx4 PC3L-12800R-11, ECC)  
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM  
 Other Hardware: None

System State: Run level 3 (multi-user)  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1333	163	1335	163	<b>1334</b>	<b>163</b>	8	<b>652</b>	<b>167</b>	651	167	652	167
416.gamess	16	1385	226	<b>1387</b>	<b>226</b>	1393	225	16	1369	229	1362	230	<b>1367</b>	<b>229</b>
433.milc	16	937	157	<b>938</b>	<b>157</b>	938	157	16	<b>936</b>	<b>157</b>	936	157	936	157
434.zeusmp	16	<b>613</b>	<b>237</b>	612	238	615	237	16	<b>613</b>	<b>237</b>	612	238	615	237
435.gromacs	16	624	183	624	183	<b>624</b>	<b>183</b>	16	603	190	<b>606</b>	<b>189</b>	610	187
436.cactusADM	16	732	261	<b>720</b>	<b>266</b>	720	266	16	732	261	<b>720</b>	<b>266</b>	720	266
437.leslie3d	16	1343	112	1337	112	<b>1338</b>	<b>112</b>	8	630	119	<b>630</b>	<b>119</b>	630	119
444.namd	16	722	178	713	180	<b>715</b>	<b>179</b>	16	705	182	<b>706</b>	<b>182</b>	706	182
447.dealII	16	<b>451</b>	<b>406</b>	453	404	449	407	16	<b>451</b>	<b>406</b>	453	404	449	407
450.soplex	16	<b>1034</b>	<b>129</b>	1035	129	1034	129	8	444	150	445	150	<b>445</b>	<b>150</b>
453.povray	16	280	304	<b>278</b>	<b>306</b>	277	307	16	<b>240</b>	<b>355</b>	240	355	239	356
454.calculix	16	468	282	471	281	<b>469</b>	<b>281</b>	16	<b>470</b>	<b>281</b>	468	282	471	280
459.GemsFDTD	16	1584	107	<b>1583</b>	<b>107</b>	1581	107	16	1584	107	<b>1583</b>	<b>107</b>	1581	107
465.tonto	16	662	238	670	235	<b>669</b>	<b>235</b>	16	648	243	<b>646</b>	<b>244</b>	642	245
470.lbm	16	<b>1022</b>	<b>215</b>	1022	215	1023	215	16	<b>1022</b>	<b>215</b>	1022	215	1023	215
481.wrf	16	919	194	<b>919</b>	<b>194</b>	919	195	16	<b>909</b>	<b>197</b>	910	196	909	197
482.sphinx3	16	1658	188	<b>1658</b>	<b>188</b>	1656	188	16	<b>1632</b>	<b>191</b>	1632	191	1633	191

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Platform Notes

BIOS Settings:  
Energy Performance: Performance  
Memory Voltage: 1.5 V



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 205

Express5800/B120d (Intel Xeon E5-2450)

SPECfp\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Oct-2012

Test sponsor: NEC Corporation

Hardware Availability: Oct-2012

Tested by: NEC Corporation

Software Availability: Feb-2012

## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

Added glibc-static-2.12-1.47.el6.x86\_64.rpm  
to enable static linking

Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches  
runspec command invoked through numactl i.e.:  
numactl --interleave=all runspec <etc>

## 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



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 205

Express5800/B120d (Intel Xeon E5-2450)

SPECfp\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Oct-2012

Test sponsor: NEC Corporation

Hardware Availability: Oct-2012

Tested by: NEC Corporation

Software Availability: Feb-2012

## Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## 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  
436.cactusADM: -DSPEC\_CPU\_LP64 -nofor\_main  
437.leslie3d: -DSPEC\_CPU\_LP64  
444.namd: -DSPEC\_CPU\_LP64  
447.deallI: -DSPEC\_CPU\_LP64  
453.povray: -DSPEC\_CPU\_LP64

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 205

Express5800/B120d (Intel Xeon E5-2450)

SPECfp\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Oct-2012

Test sponsor: NEC Corporation

Hardware Availability: Oct-2012

Tested by: NEC Corporation

Software Availability: Feb-2012

## Peak Portability Flags (Continued)

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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32  
 -opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

C++ benchmarks:

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

447.dealII: basepeak = yes

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

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

Fortran benchmarks:

410.bwaves: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: basepeak = yes

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp\_rate2006 = 205

Express5800/B120d (Intel Xeon E5-2450)

SPECfp\_rate\_base2006 = 199

CPU2006 license: 9006

Test date: Oct-2012

Test sponsor: NEC Corporation

Hardware Availability: Oct-2012

Tested by: NEC Corporation

Software Availability: Feb-2012

## Peak Optimization Flags (Continued)

```
465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
           -inline-calloc -opt-malloc-options=3
```

Benchmarks using both Fortran and C:

```
435.gromacs: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
            -auto-p32 -ansi-alias -opt-mem-layout-trans=3
```

```
436.cactusADM: basepeak = yes
```

```
454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32
            -opt-mem-layout-trans=3
```

```
481.wrf: Same as 454.calculix
```

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.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 v1.2.

Report generated on Thu Jul 24 14:07:37 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 20 November 2012.