



SPEC[®] CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp[®]_rate2006 = 307

Express5800/R120e-1M (Intel Xeon E5-2670 v2)

SPECfp_rate_base2006 = 299

CPU2006 license: 9006

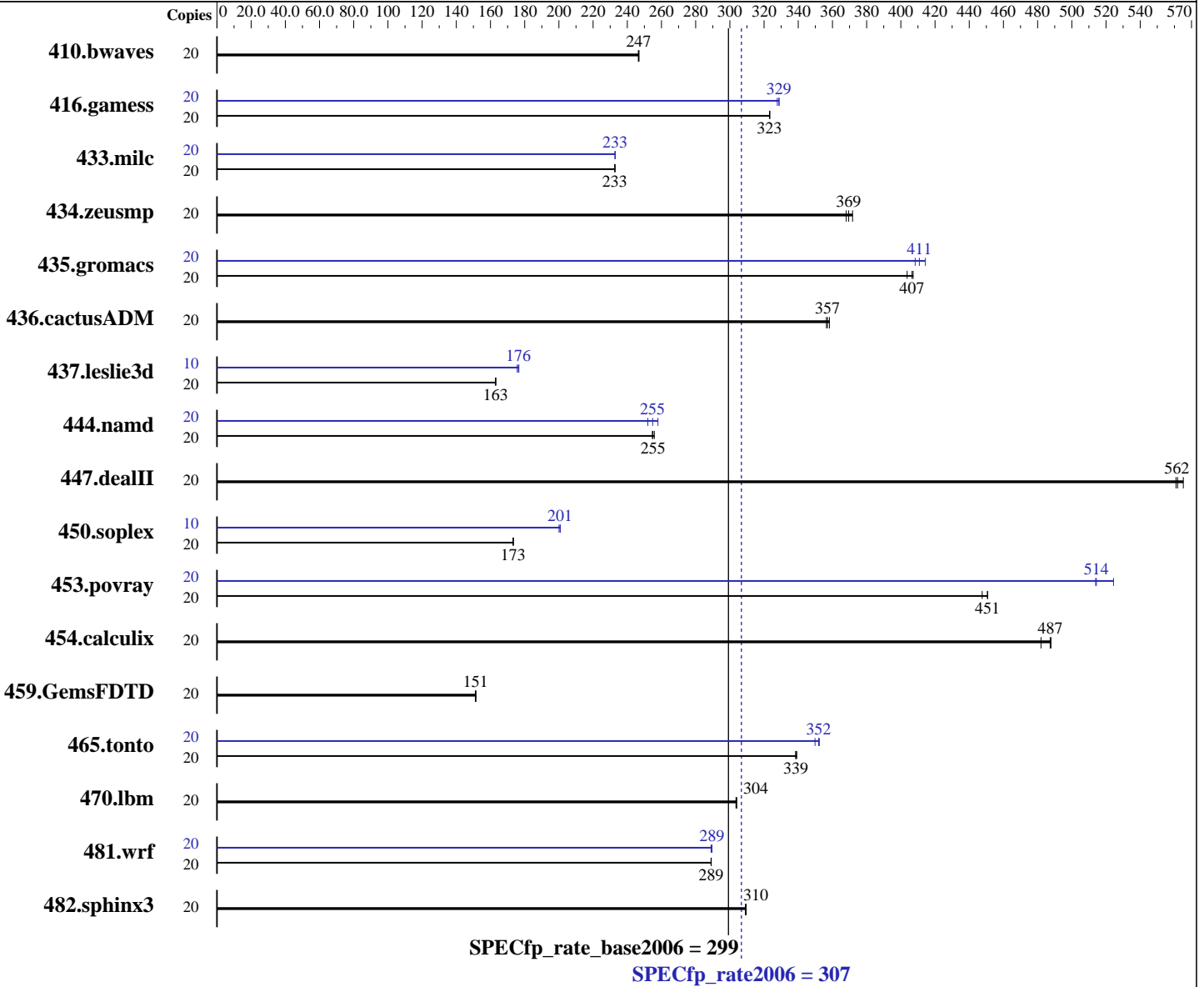
Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Sep-2013

Tested by: NEC Corporation

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2670 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2500
 FPU: Integrated
 CPU(s) enabled: 10 cores, 1 chip, 10 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 6.4 (Santiago)
 Kernel 2.6.32-358.18.1.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 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 = 307

Express5800/R120e-1M (Intel Xeon E5-2670 v2)

SPECfp_rate_base2006 = 299

CPU2006 license: 9006

Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Sep-2013

Tested by: NEC Corporation

Software Availability: Sep-2013

L3 Cache: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 64 GB (4 x 16 GB 2Rx4 PC3-14900R-13, ECC)
 Disk Subsystem: 1 x 250 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	20	1101	247	1103	246	<u>1102</u>	<u>247</u>	20	1101	247	1103	246	<u>1102</u>	<u>247</u>
416.gamess	20	1211	323	1212	323	<u>1212</u>	<u>323</u>	20	1191	329	<u>1191</u>	<u>329</u>	1195	328
433.milc	20	789	233	<u>789</u>	<u>233</u>	789	233	20	788	233	<u>788</u>	<u>233</u>	789	233
434.zeusmp	20	<u>493</u>	<u>369</u>	495	368	490	372	20	<u>493</u>	<u>369</u>	495	368	490	372
435.gromacs	20	354	404	351	407	<u>351</u>	<u>407</u>	20	345	414	<u>348</u>	<u>411</u>	350	408
436.cactusADM	20	667	358	<u>669</u>	<u>357</u>	670	356	20	667	358	<u>669</u>	<u>357</u>	670	356
437.leslie3d	20	1153	163	1154	163	<u>1153</u>	<u>163</u>	10	532	177	535	176	<u>533</u>	<u>176</u>
444.namd	20	627	256	<u>629</u>	<u>255</u>	630	255	20	622	258	<u>629</u>	<u>255</u>	636	252
447.dealII	20	<u>407</u>	<u>562</u>	405	565	408	561	20	<u>407</u>	<u>562</u>	405	565	408	561
450.soplex	20	962	173	963	173	<u>962</u>	<u>173</u>	10	415	201	<u>415</u>	<u>201</u>	417	200
453.povray	20	238	448	236	451	<u>236</u>	<u>451</u>	20	<u>207</u>	<u>514</u>	207	514	203	524
454.calculix	20	342	482	<u>339</u>	<u>487</u>	338	488	20	342	482	<u>339</u>	<u>487</u>	338	488
459.GemsFDTD	20	<u>1403</u>	<u>151</u>	1401	151	1404	151	20	<u>1403</u>	<u>151</u>	1401	151	1404	151
465.tonto	20	<u>581</u>	<u>339</u>	580	339	581	339	20	559	352	563	350	<u>559</u>	<u>352</u>
470.lbm	20	<u>904</u>	<u>304</u>	905	304	904	304	20	<u>904</u>	<u>304</u>	905	304	904	304
481.wrf	20	773	289	773	289	<u>773</u>	<u>289</u>	20	<u>772</u>	<u>289</u>	773	289	772	290
482.sphinx3	20	1259	310	1261	309	<u>1259</u>	<u>310</u>	20	1259	310	1261	309	<u>1259</u>	<u>310</u>

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



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp_rate2006 = 307

Express5800/R120e-1M (Intel Xeon E5-2670 v2)

SPECfp_rate_base2006 = 299

CPU2006 license: 9006

Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Sep-2013

Tested by: NEC Corporation

Software Availability: Sep-2013

General Notes

Environment variables set by runspec before the start of the run:

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

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>

The Express5800/R120e-1M and

the Express5800/R120e-2M models are electronically equivalent.

The results have been measured on the Express5800/R120e-1M 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



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp_rate2006 = 307

Express5800/R120e-1M (Intel Xeon E5-2670 v2)

SPECfp_rate_base2006 = 299

CPU2006 license: 9006

Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Sep-2013

Tested by: NEC Corporation

Software Availability: Sep-2013

Base Optimization Flags

C benchmarks:

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

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

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

Peak Compiler Invocation

C benchmarks:

`icc -m64`

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.dealII: `-DSPEC_CPU_LP64`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp_rate2006 = 307

Express5800/R120e-1M (Intel Xeon E5-2670 v2)

SPECfp_rate_base2006 = 299

CPU2006 license: 9006

Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Sep-2013

Tested by: NEC Corporation

Software Availability: Sep-2013

Peak Portability Flags (Continued)

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

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) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

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

447.dealIII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(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) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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-

434.zeusmp: basepeak = yes

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

459.GemsFDTD: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

SPECfp_rate2006 = 307

Express5800/R120e-1M (Intel Xeon E5-2670 v2)

SPECfp_rate_base2006 = 299

CPU2006 license: 9006

Test date: Oct-2013

Test sponsor: NEC Corporation

Hardware Availability: Sep-2013

Tested by: NEC Corporation

Software Availability: Sep-2013

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

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.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-ic14.0-official-linux64.20140128.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.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 17:25:00 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 19 November 2013.