SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

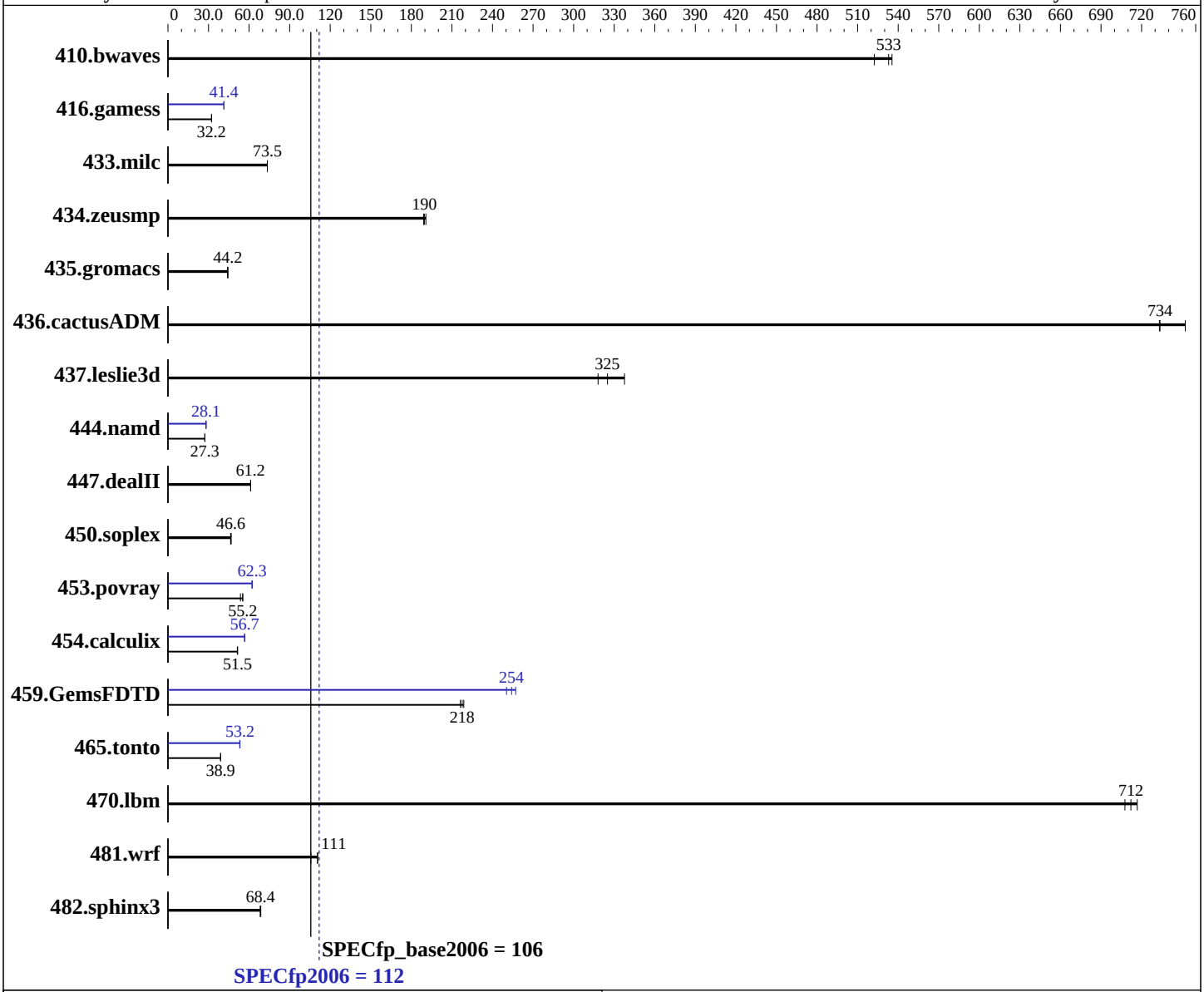
Express5800/R120g-2M (Intel Xeon E5-2630 v4)

SPECfp®2006 = 112

SPECfp_base2006 = 106

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

Test date: Apr-2016
Hardware Availability: Apr-2016
Software Availability: Jan-2016



Hardware

CPU Name:	Intel Xeon E5-2630 v4
CPU Characteristics:	Intel Turbo Boost Technology up to 3.10 GHz
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 10 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:	Red Hat Enterprise Linux Server release 7.2 (Maipo) Kernel 3.10.0-327.4.5.el7.x86_64
Compiler:	C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux; Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

NEC Corporation

Express5800/R120g-2M (Intel Xeon E5-2630 v4)

SPECfp2006 = 112

SPECfp_base2006 = 106

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

Test date: Apr-2016
Hardware Availability: Apr-2016
Software Availability: Jan-2016

L3 Cache: 25 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2400T-R, running at 2133 MHz)
Disk Subsystem: 1 x 1 TB SATA, 7200 RPM
Other Hardware: None

System State: Run level 3 (multi-user)
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	26.0	522	**25.5**	**533**	25.4	535	26.0	522	**25.5**	**533**	25.4	535
416.gamess	**607**	**32.2**	608	32.2	607	32.2	473	41.4	**473**	**41.4**	473	41.4
433.milc	**125**	**73.5**	125	73.5	125	73.5	**125**	**73.5**	125	73.5	125	73.5
434.zeusmp	**48.0**	**190**	47.7	191	48.1	189	**48.0**	**190**	47.7	191	48.1	189
435.gromacs	162	44.2	161	44.3	**162**	**44.2**	162	44.2	161	44.3	**162**	**44.2**
436.cactusADM	**16.3**	**734**	15.9	752	16.3	733	**16.3**	**734**	15.9	752	16.3	733
437.leslie3d	29.6	318	**28.9**	**325**	27.8	338	29.6	318	**28.9**	**325**	27.8	338
444.namd	294	27.3	294	27.3	**294**	**27.3**	285	28.1	285	28.1	**285**	**28.1**
447.dealII	187	61.1	187	61.2	**187**	**61.2**	187	61.1	187	61.2	**187**	**61.2**
450.soplex	179	46.7	**179**	**46.6**	180	46.3	179	46.7	**179**	**46.6**	180	46.3
453.povray	**96.3**	**55.2**	96.1	55.3	99.2	53.6	**85.4**	**62.3**	85.7	62.1	85.1	62.5
454.calculix	**160**	**51.5**	160	51.5	161	51.3	**145**	**56.7**	146	56.7	145	56.8
459.GemsFDTD	49.1	216	48.5	219	**48.8**	**218**	**41.8**	**254**	42.4	250	41.3	257
465.tonto	253	38.9	**253**	**38.9**	252	39.1	185	53.1	**185**	**53.2**	185	53.3
470.lbm	**19.3**	**712**	19.4	708	19.2	717	**19.3**	**712**	19.4	708	19.2	717
481.wrf	**101**	**111**	106	106	101	111	**101**	**111**	106	106	101	111
482.sphinx3	**285**	**68.4**	285	68.3	284	68.7	**285**	**68.4**	285	68.3	284	68.7

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

Operating System Notes

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

Platform Notes

```
BIOS Settings:
 Power Management Policy: Custom
 Energy Performance: Performance
 Patrol Scrub: Disabled
 Snoop Mode: Home Snoop with Directory
 Hyper-Threading: Disabled
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "20"

 Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
 memory using RedHat EL 7.1

 The Express5800/R120g-1M (Intel Xeon E5-2630 v4) and
 the Express5800/R120g-2M (Intel Xeon E5-2630 v4) models are electronically equivalent.
 The results have been measured on the Express5800/R120g-2M (Intel Xeon E5-2630 v4) model.

 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/transparent_hugepage/enabled
```

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

Continued on next page

Base Portability Flags (Continued)

482.sphinx3: `-DSPEC_CPU_LP64`

Base Optimization Flags

C benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

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`

Continued on next page

Peak Optimization Flags (Continued)

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2 -inline-level=0 -opt-prefetch -parallel

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -par-num-threads=1(pass 1) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

Continued on next page

Peak Optimization Flags (Continued)

454.calculix: `-xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias`

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-ic16.0-official-linux64.html`
`http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120g-RevC.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml`
`http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120g-RevC.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 Wed Jun 1 19:08:56 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 June 2016.