SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

NEC Corporation

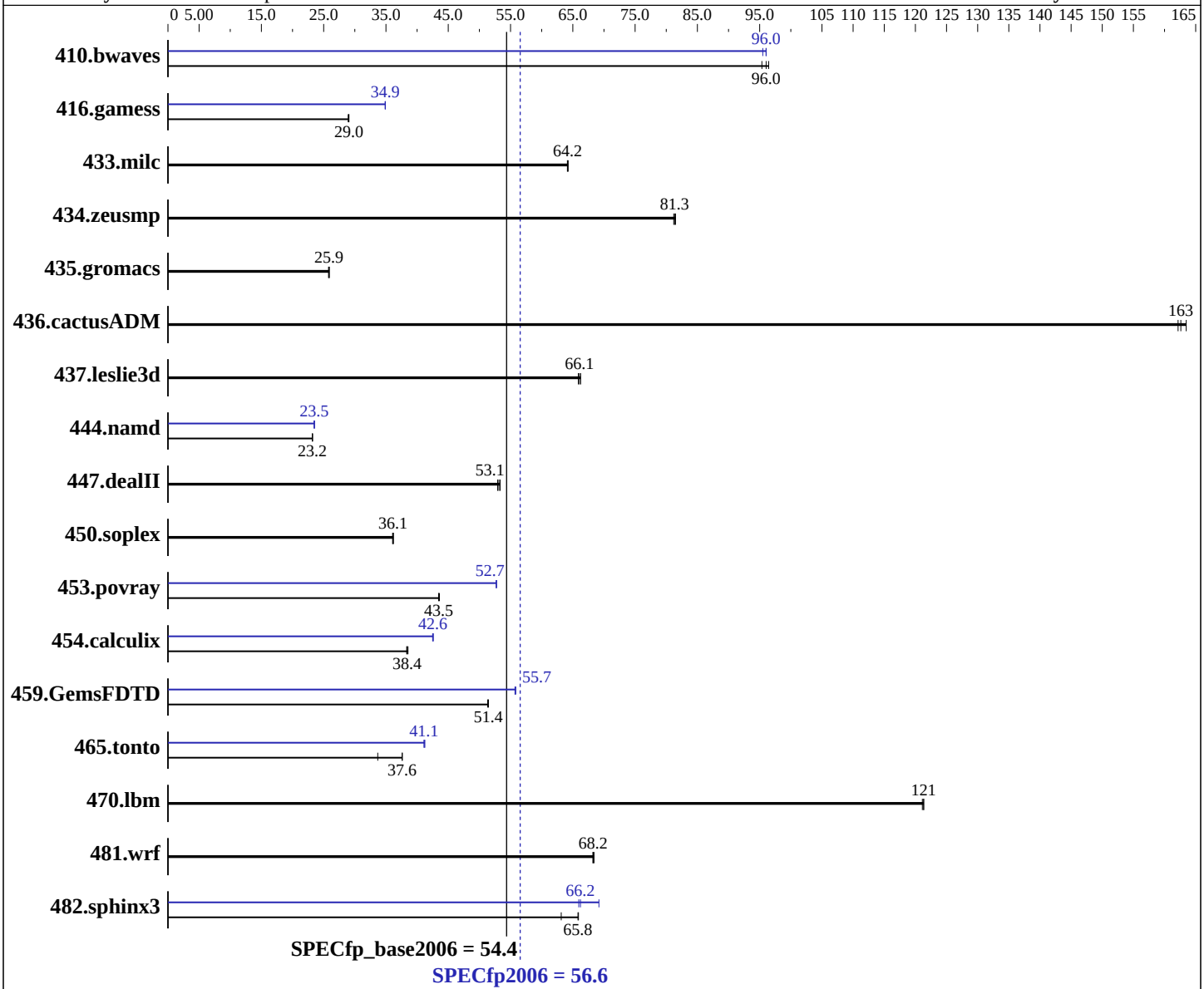
Express5800/GT110d-S (Intel Xeon E3-1220)

SPECfp®2006 = 56.6

SPECfp_base2006 = 54.4

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

Test date: May-2011
Hardware Availability: Jun-2011
Software Availability: Mar-2011



Hardware

CPU Name:	Intel Xeon E3-1220
CPU Characteristics:	Intel Turbo Boost Technology up to 3.40 GHz
CPU MHz:	3100
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
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 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64, Version 12.0.3.174 Build 20110309
Auto Parallel:	Yes
File System:	ext3
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/GT110d-S (Intel Xeon E3-1220)

SPECfp2006 = 56.6

SPECfp_base2006 = 54.4

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

Test date: May-2011
Hardware Availability: Jun-2011
Software Availability: Mar-2011

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)
Disk Subsystem: 1 x 160 GB SATA, 7200 RPM
Other Hardware: None

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	143	95.4	**142**	**96.0**	141	96.4	**142**	**96.0**	142	95.5	142	96.0
416.gamess	**674**	**29.0**	677	28.9	674	29.0	**561**	**34.9**	561	34.9	561	34.9
433.milc	143	64.2	143	64.1	**143**	**64.2**	143	64.2	143	64.1	**143**	**64.2**
434.zeusmp	**112**	**81.3**	112	81.2	112	81.5	**112**	**81.3**	112	81.2	112	81.5
435.gromacs	**276**	**25.9**	277	25.8	276	25.9	**276**	**25.9**	277	25.8	276	25.9
436.cactusADM	73.1	163	73.7	162	**73.5**	**163**	73.1	163	73.7	162	**73.5**	**163**
437.leslie3d	143	65.9	**142**	**66.1**	142	66.3	143	65.9	**142**	**66.1**	142	66.3
444.namd	**346**	**23.2**	346	23.2	346	23.2	342	23.5	341	23.5	**341**	**23.5**
447.dealII	**215**	**53.1**	215	53.3	216	52.9	**215**	**53.1**	215	53.3	216	52.9
450.soplex	231	36.1	**231**	**36.1**	230	36.2	231	36.1	**231**	**36.1**	230	36.2
453.povray	**122**	**43.5**	122	43.4	122	43.6	101	52.7	101	52.7	**101**	**52.7**
454.calculix	214	38.5	215	38.3	**215**	**38.4**	**194**	**42.6**	194	42.6	194	42.5
459.GemsFDTD	207	51.3	**206**	**51.4**	206	51.4	190	55.7	**190**	**55.7**	190	55.8
465.tonto	292	33.7	262	37.6	**262**	**37.6**	239	41.2	**239**	**41.1**	239	41.1
470.lbm	**113**	**121**	113	121	113	121	**113**	**121**	113	121	113	121
481.wrf	163	68.4	**164**	**68.2**	164	68.2	163	68.4	**164**	**68.2**	164	68.2
482.sphinx3	296	65.9	**296**	**65.8**	309	63.1	296	66.0	282	69.2	**294**	**66.2**

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
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 1800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```

Platform Notes

```
Default BIOS settings were used.
```

General Notes

```
OMP_NUM_THREADS set to number of cores
The Express5800/GT110d (Intel Xeon E3-1220) and
the Express5800/GT110d-S (Intel Xeon E3-1220) models are electronically equivalent.
The results have been measured on the Express5800/GT110d-S (Intel Xeon E3-1220) 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

Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

Continued on next page

Base Optimization Flags (Continued)

C++ benchmarks:
`-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xAVX -ipo -O3 -no-prec-div -static -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`

470.lbm: `basepeak = yes`

482.sphinx3: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

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`

Continued on next page

Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel -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: basepeak = yes

459.GemsFDTD: -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 -opt-prefetch -parallel -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc -opt-malloc-options=3 -auto -unroll4 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -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-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revF.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 18:21:39 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 June 2011.