SPEC® CFP2006 Result

NEC Corporation

Express5800/GT110e-S (Intel Core i3-3240)

$SPECfp^®2006 =$ 55.6

$SPECfp\_base2006 =$ 54.4

CPU2006 license: 9006	**Test date:** Oct-2012
Test sponsor: NEC Corporation	**Hardware Availability:** Oct-2012
Tested by: NEC Corporation	**Software Availability:** Feb-2012

Benchmark results (scale 0 to 105):

Benchmark	Peak (blue)	Base (black)
410.bwaves	103	103
416.gamess	37.9	35.8
433.milc	74.0	72.7
434.zeusmp		78.7
435.gromacs		30.4
436.cactusADM		96.8
437.leslie3d		63.7
444.namd	24.1	23.7
447.dealII	60.5	60.3
450.soplex		36.8
453.povray	52.9	44.7
454.calculix	44.4	43.3
459.GemsFDTD	50.4	48.5
465.tonto	45.0	42.4
470.lbm		101
481.wrf		77.6
482.sphinx3		48.8

SPECfp_base2006 = 54.4
SPECfp2006 = 55.6

Hardware

CPU Name:	Intel Core i3-3240
CPU Characteristics:	
CPU MHz:	3400
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
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

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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:	Yes
File System:	ext4

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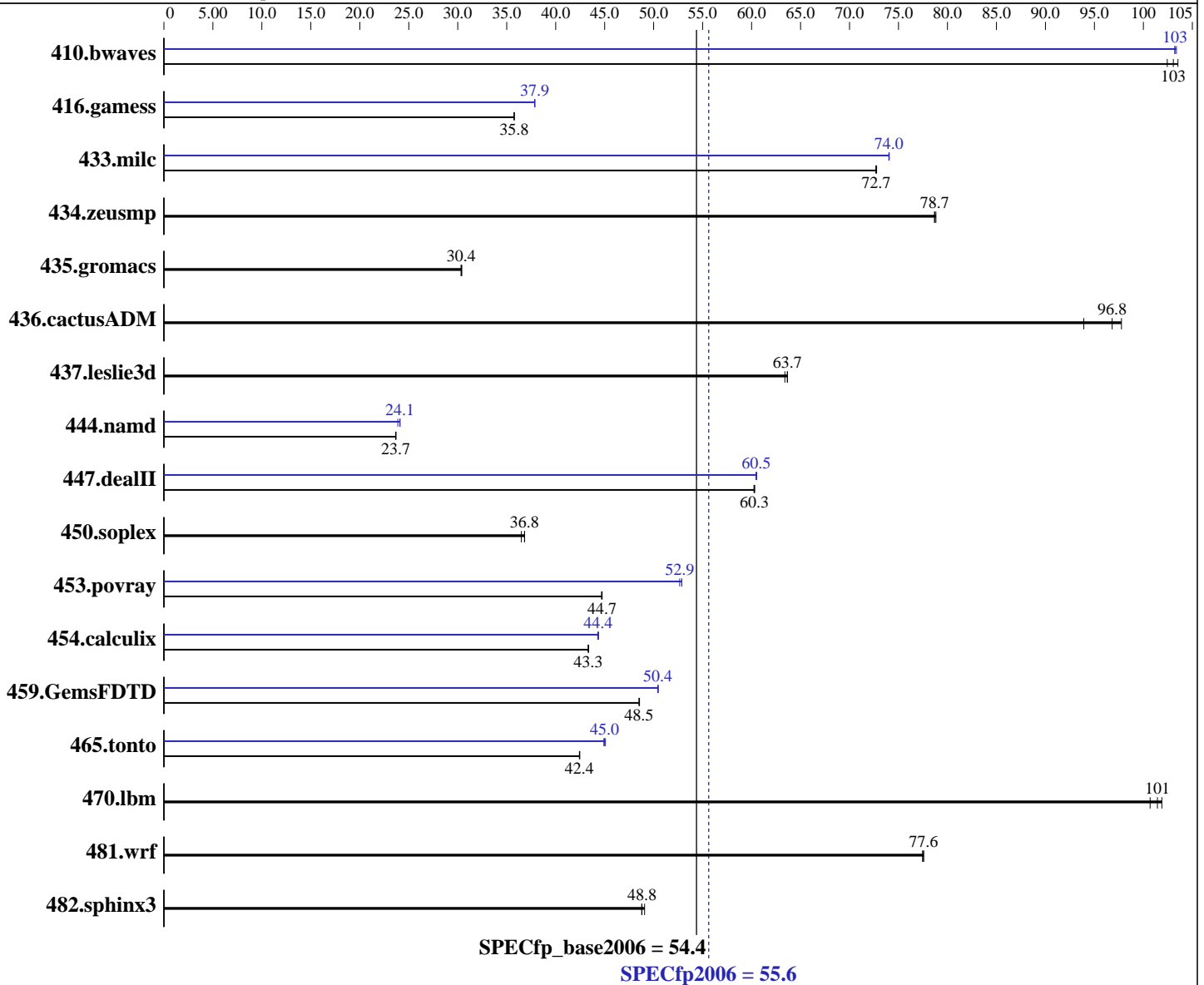| SPECfp2006 =	55.6
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CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Oct-2012
Hardware Availability: Oct-2012
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L3 Cache:	3 MB I+D on chip per chip
Other Cache:	None
Memory:	16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC)
Disk Subsystem:	1 x 1000 GB 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	**132**	**103**	133	102	131	104	131	103	**132**	**103**	132	103
416.gamess	548	35.8	**548**	**35.8**	547	35.8	517	37.9	**517**	**37.9**	517	37.9
433.milc	126	72.7	126	72.8	**126**	**72.7**	124	74.0	124	74.1	**124**	**74.0**
434.zeusmp	116	78.7	**116**	**78.7**	115	78.8	116	78.7	**116**	**78.7**	115	78.8
435.gromacs	235	30.4	235	30.3	**235**	**30.4**	235	30.4	235	30.3	**235**	**30.4**
436.cactusADM	122	97.8	**123**	**96.8**	127	93.9	122	97.8	**123**	**96.8**	127	93.9
437.leslie3d	148	63.4	148	63.7	**148**	**63.7**	148	63.4	148	63.7	**148**	**63.7**
444.namd	339	23.7	**339**	**23.7**	339	23.7	336	23.9	333	24.1	**333**	**24.1**
447.dealII	190	60.2	**190**	**60.3**	190	60.3	**189**	**60.5**	189	60.5	189	60.5
450.soplex	229	36.5	**227**	**36.8**	227	36.8	229	36.5	**227**	**36.8**	227	36.8
453.povray	**119**	**44.7**	119	44.7	119	44.7	**101**	**52.9**	101	52.9	101	52.7
454.calculix	190	43.3	190	43.4	**190**	**43.3**	186	44.4	**186**	**44.4**	186	44.3
459.GemsFDTD	219	48.5	218	48.6	**219**	**48.5**	210	50.5	**210**	**50.4**	210	50.4
465.tonto	232	42.4	232	42.5	**232**	**42.4**	218	45.1	**219**	**45.0**	219	44.9
470.lbm	135	102	136	101	**135**	**101**	135	102	136	101	**135**	**101**
481.wrf	144	77.5	**144**	**77.6**	144	77.6	144	77.5	**144**	**77.6**	144	77.6
482.sphinx3	400	48.8	**399**	**48.8**	397	49.1	400	48.8	**399**	**48.8**	397	49.1

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

    Default BIOS settings were used.

General Notes

    Environment variables set by runspec before the start of the run:
    KMP_AFFINITY = "granularity=fine,compact,1,0"
    LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
    OMP_NUM_THREADS = "2"

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General Notes (Continued)

```
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
```

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
```

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$SPECfp\_base2006 =$ 54.4

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: -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
          -ansi-alias
```

```
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) -prof-use(pass 2) -fno-alias
          -auto-ilp32
```

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SPECfp_base2006 =   54.4

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Tested by: NEC Corporation

Test date: Oct-2012
Hardware Availability: Oct-2012
Software Availability: Feb-2012

Peak Optimization Flags (Continued)

447.dealII: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

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`

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: `-xSSE4.2(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`

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`

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-ic12.1-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

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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