SPEC® CFP2006 Result

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Fujitsu

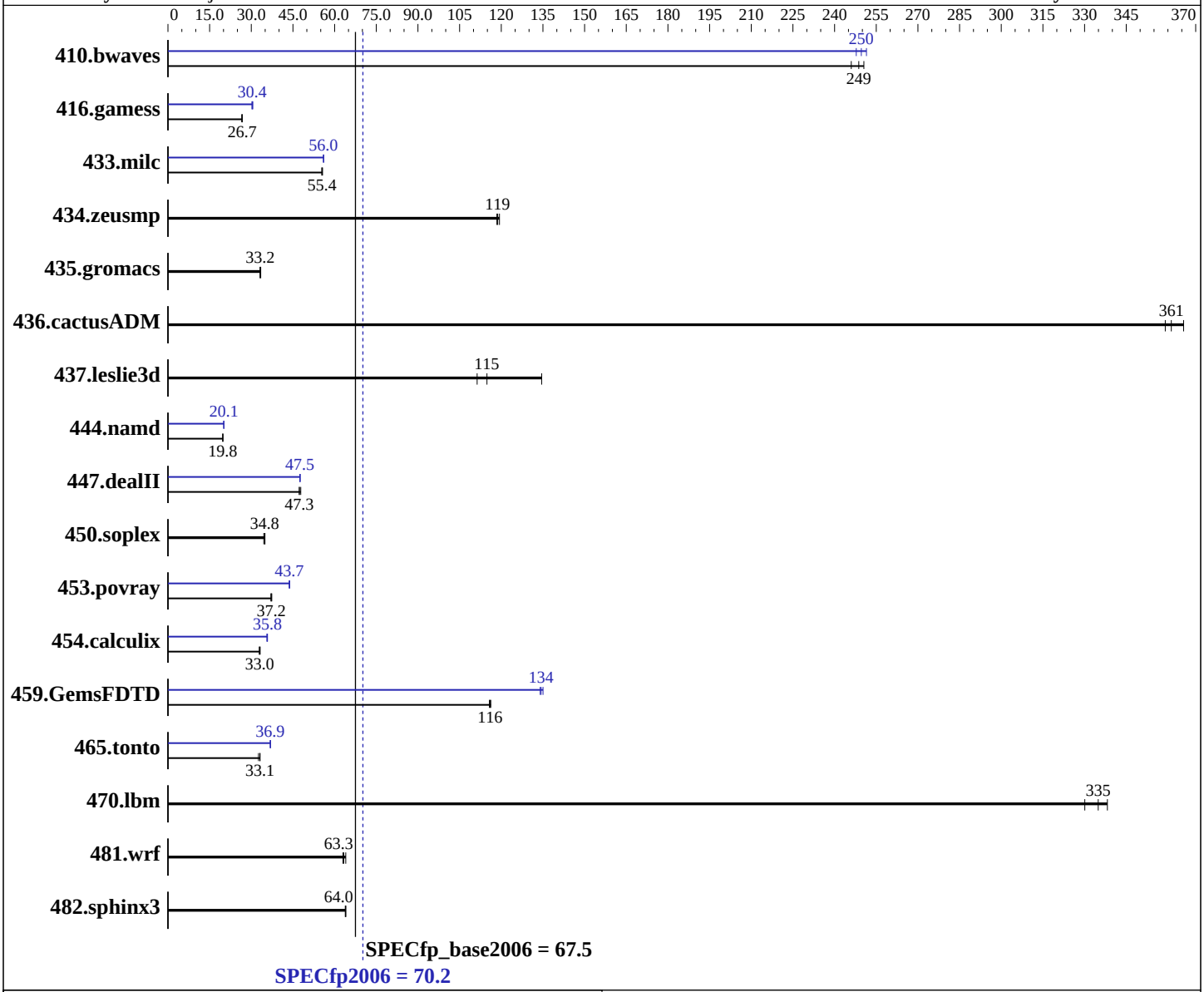
PRIMERGY TX200 S7, Intel Xeon E5-2440, 2.40 GHz

SPECfp®2006 = 70.2

SPECfp_base2006 = 67.5

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Aug-2012
Hardware Availability: Jul-2012
Software Availability: Feb-2012



Hardware

CPU Name:	Intel Xeon E5-2440
CPU Characteristics:	Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 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

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Software

Operating System:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.293 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem: 1 x SATA, 500 GB, 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	55.2	246	**54.6**	**249**	54.2	251	54.8	248	54.0	251	**54.4**	**250**
416.gamess	732	26.8	**733**	**26.7**	737	26.6	648	30.2	**645**	**30.4**	641	30.6
433.milc	165	55.7	**166**	**55.4**	166	55.4	**164**	**56.0**	164	56.0	164	56.0
434.zeusmp	76.2	119	76.8	118	**76.6**	**119**	76.2	119	76.8	118	**76.6**	**119**
435.gromacs	**215**	**33.2**	215	33.2	214	33.4	**215**	**33.2**	215	33.2	214	33.4
436.cactusADM	32.7	366	**33.1**	**361**	33.3	359	32.7	366	**33.1**	**361**	33.3	359
437.leslie3d	69.9	135	84.5	111	**81.9**	**115**	69.9	135	84.5	111	**81.9**	**115**
444.namd	406	19.8	406	19.7	**406**	**19.8**	399	20.1	**399**	**20.1**	399	20.1
447.dealII	239	47.8	**242**	**47.3**	242	47.3	241	47.5	240	47.6	**241**	**47.5**
450.soplex	**239**	**34.8**	242	34.5	239	34.9	**239**	**34.8**	242	34.5	239	34.9
453.povray	142	37.4	**143**	**37.2**	144	37.1	121	43.8	122	43.7	**122**	**43.7**
454.calculix	249	33.2	**250**	**33.0**	251	32.9	232	35.6	**230**	**35.8**	230	35.8
459.GemsFDTD	91.7	116	91.3	116	**91.5**	**116**	79.2	134	**79.0**	**134**	78.6	135
465.tonto	302	32.6	297	33.2	**297**	**33.1**	266	36.9	**267**	**36.9**	267	36.8
470.lbm	41.6	330	**41.0**	**335**	40.6	338	41.6	330	**41.0**	**335**	40.6	338
481.wrf	**176**	**63.3**	177	63.0	174	64.0	**176**	**63.3**	177	63.0	174	64.0
482.sphinx3	**305**	**64.0**	305	63.8	304	64.0	**305**	**64.0**	305	63.8	304	64.0

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

Platform Notes

```
BIOS configuration:
Frequency Floor Override = Enable
```

General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"
OMP_NUM_THREADS = "12"

 Binaries compiled on a system with 1x E3-1270v2 CPU + 32 GB
 memory using RHEL6.2
 For information about Fujitsu please visit: http://www.fujitsu.com
```

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
```

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

Continued on next page

Peak Optimization Flags (Continued)

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: -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-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.html

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

`http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml`
`http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120320.xml`

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 10:23:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 11 September 2012.