SPEC® CFP2006 Result
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Fujitsu

PRIMERGY TX300 S8, Intel Xeon E5-2650L v2, 1.70 GHz

$SPECfp^{®}2006 =$ 69.8

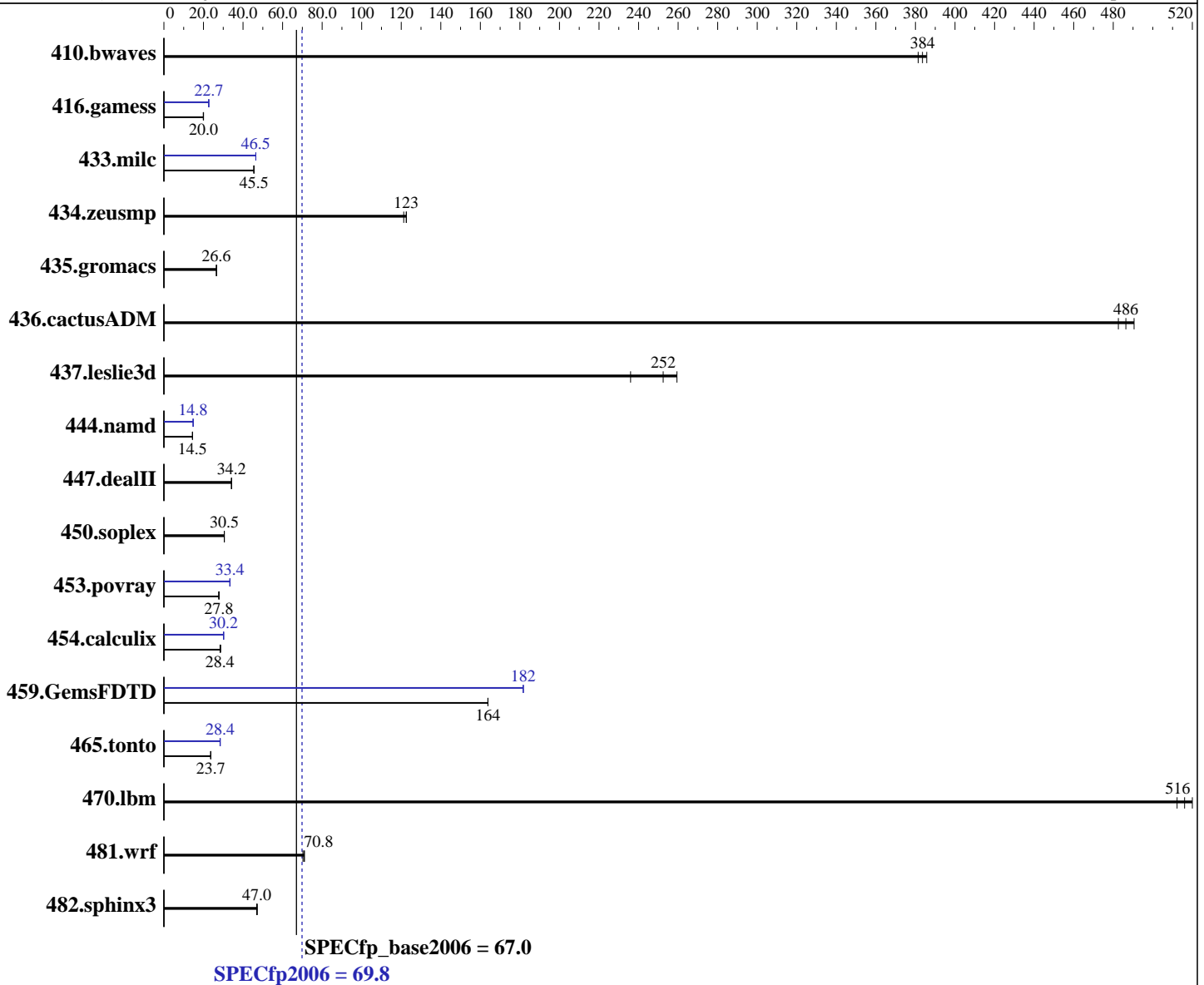$SPECfp\_base2006 =$ 67.0

CPU2006 license: 19	**Test date:** Sep-2013
Test sponsor: Fujitsu	**Hardware Availability:** Oct-2013
Tested by: Fujitsu	**Software Availability:** Sep-2013

Benchmark	Value
410.bwaves	384
416.gamess	22.7 / 20.0
433.milc	46.5 / 45.5
434.zeusmp	123
435.gromacs	26.6
436.cactusADM	486
437.leslie3d	252
444.namd	14.8 / 14.5
447.dealII	34.2
450.soplex	30.5
453.povray	33.4 / 27.8
454.calculix	30.2 / 28.4
459.GemsFDTD	182 / 164
465.tonto	28.4 / 23.7
470.lbm	516
481.wrf	70.8
482.sphinx3	47.0

SPECfp_base2006 = 67.0

SPECfp2006 = 69.8

Hardware
CPU Name:	Intel Xeon E5-2650L v2
CPU Characteristics:	Intel Turbo Boost Technology up to 2.10 GHz
CPU MHz:	1700
FPU:	Integrated
CPU(s) enabled:	20 cores, 2 chips, 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

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Software
Operating System:	Red Hat Enterprise Linux Server release 6.4 (Santiago) 2.6.32-358.11.1.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:	Yes
File System:	ext4

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L3 Cache:	25 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC, running at 1600 MHz)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x SATA, 450 GB, 15000 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**35.4**	**384**	35.2	386	35.6	381	**35.4**	**384**	35.2	386	35.6	381
416.gamess	985	19.9	**980**	**20.0**	977	20.0	864	22.7	863	22.7	**863**	**22.7**
433.milc	201	45.6	**202**	**45.5**	202	45.5	**198**	**46.5**	198	46.5	198	46.5
434.zeusmp	74.3	123	75.1	121	**74.3**	**123**	74.3	123	75.1	121	**74.3**	**123**
435.gromacs	268	26.6	**269**	**26.6**	269	26.5	268	26.6	**269**	**26.6**	269	26.5
436.cactusADM	**24.6**	**486**	24.8	483	24.4	491	**24.6**	**486**	24.8	483	24.4	491
437.leslie3d	39.8	236	**37.2**	**252**	36.2	259	39.8	236	**37.2**	**252**	36.2	259
444.namd	555	14.5	555	14.5	**555**	**14.5**	543	14.8	543	14.8	**543**	**14.8**
447.dealII	334	34.2	**335**	**34.2**	335	34.2	334	34.2	**335**	**34.2**	335	34.2
450.soplex	273	30.5	**273**	**30.5**	273	30.5	273	30.5	**273**	**30.5**	273	30.5
453.povray	191	27.9	**191**	**27.8**	192	27.7	160	33.3	159	33.5	**159**	**33.4**
454.calculix	291	28.4	287	28.7	**291**	**28.4**	**273**	**30.2**	273	30.2	274	30.1
459.GemsFDTD	64.8	164	**64.8**	**164**	64.8	164	58.4	182	**58.4**	**182**	58.4	182
465.tonto	**416**	**23.7**	416	23.6	414	23.8	**346**	**28.4**	345	28.5	347	28.4
470.lbm	**26.6**	**516**	26.8	512	26.4	520	**26.6**	**516**	26.8	512	26.4	520
481.wrf	159	70.3	157	71.1	**158**	**70.8**	159	70.3	157	71.1	**158**	**70.8**
482.sphinx3	416	46.9	413	47.2	**415**	**47.0**	416	46.9	413	47.2	**415**	**47.0**

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"

Platform Notes

BIOS configuration:
Energy Performance = Performance
Utilization Profile = Unbalanced

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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:/SPECcpu2006/sh"
OMP_NUM_THREADS = "20"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RedHat EL 6.4
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>
 This result was measured on the PRIMERGY RX350 S8. The PRIMERGY RX350 S8
 and the PRIMERGY TX300 S8 are electronically equivalent.
 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
```

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Base Portability Flags (Continued)

482.sphinx3: `-DSPEC_CPU_LP64`

Base Optimization Flags

C benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias`

C++ benchmarks:

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

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

`-xAVX -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: `-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)`
`-no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32`
`-ansi-alias`

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Software Availability: Sep-2013

Peak Optimization Flags (Continued)

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

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

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: 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

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

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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/Fujitsu-Platform.20130924.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/Fujitsu-Platform.20130924.xml

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

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