SPEC® CFP2006 Result
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Fujitsu

PRIMERGY CX250 S2, Intel Xeon E5-2695 v2, 2.40 GHz

$SPECfp^{®}2006 =$ 96.6

$SPECfp\_base2006 =$ 92.2

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

0 20.0   50.0   80.0   110 130 150 170 190 210 230 250 270 290 310 330 350 370 390 410 430 450 470 490 510 530 550 570 590 610 630 650 680

- 410.bwaves — 468
- 416.gamess — 34.5 / 29.2
- 433.milc — 63.4 / 62.4
- 434.zeusmp — 164
- 435.gromacs — 38.0
- 436.cactusADM — 668
- 437.leslie3d — 313
- 444.namd — 22.5 / 22.0
- 447.dealII — 50.5
- 450.soplex — 43.9
- 453.povray — 50.9 / 42.7
- 454.calculix — 44.8 / 41.5
- 459.GemsFDTD — 220 / 202
- 465.tonto — 42.9 / 33.8
- 470.lbm — 636
- 481.wrf — 94.0
- 482.sphinx3 — 65.3 / 64.9

SPECfp_base2006 = 92.2

SPECfp2006 = 96.6

Hardware

CPU Name:	Intel Xeon E5-2695 v2
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	24 cores, 2 chips, 12 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

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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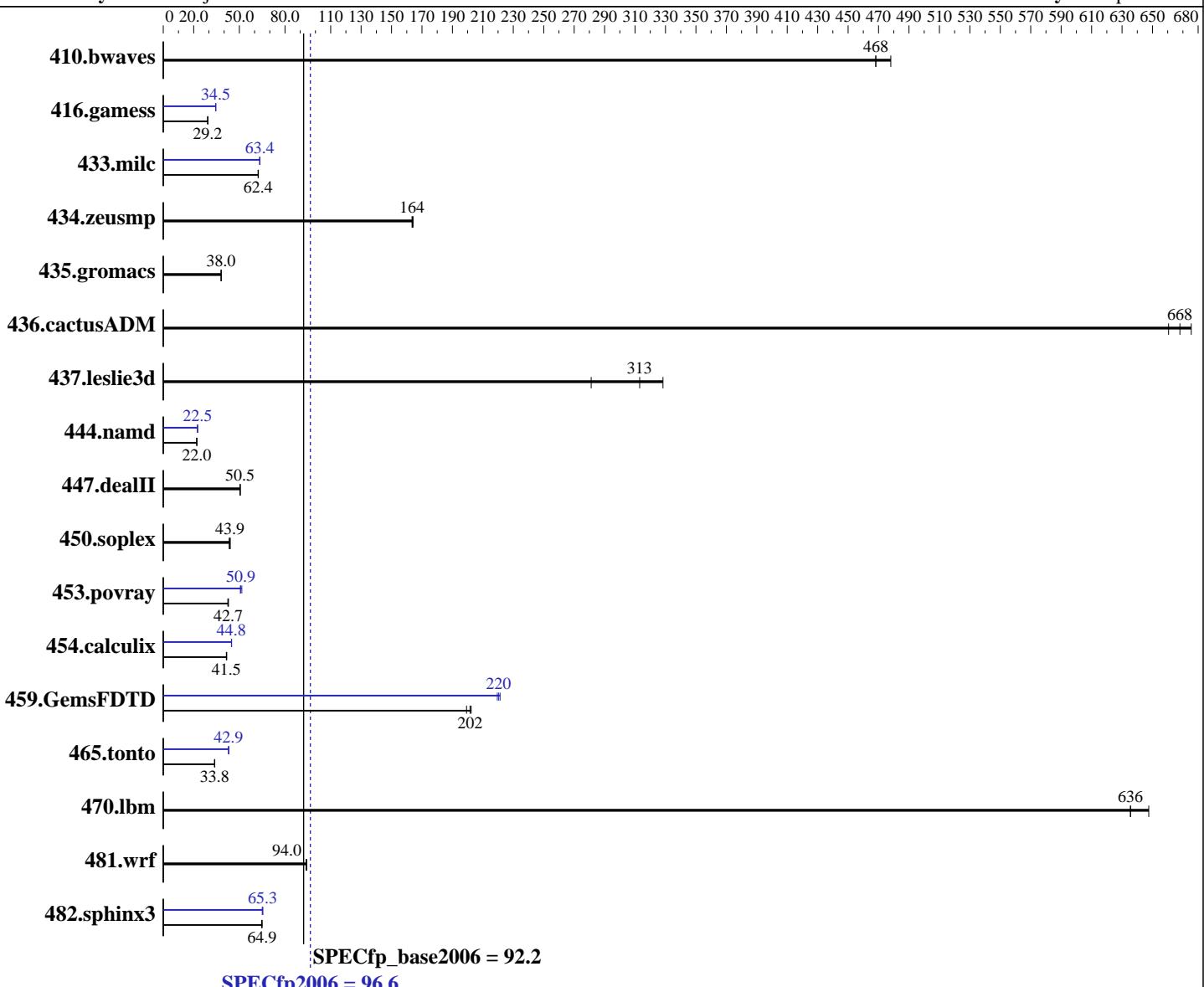|	
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L3 Cache:	30 MB I+D on chip per chip	System State:	Run level 5 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	256 GB (16 x 16 GB 2Rx4 PC3-14900R-13, ECC)	Peak Pointers:	32/64-bit
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM	Other Software:	None
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	28.4	478	29.0	468	**29.0**	**468**	28.4	478	29.0	468	**29.0**	**468**
416.gamess	670	29.2	670	29.2	**670**	**29.2**	568	34.5	568	34.5	**568**	**34.5**
433.milc	**147**	**62.4**	147	62.3	147	62.5	145	63.5	145	63.3	**145**	**63.4**
434.zeusmp	**55.6**	**164**	55.4	164	55.6	164	**55.6**	**164**	55.4	164	55.6	164
435.gromacs	188	38.1	**188**	**38.0**	188	38.0	188	38.1	**188**	**38.0**	188	38.0
436.cactusADM	18.1	661	17.7	675	**17.9**	**668**	18.1	661	17.7	675	**17.9**	**668**
437.leslie3d	33.4	281	28.6	328	**30.0**	**313**	33.4	281	28.6	328	**30.0**	**313**
444.namd	**364**	**22.0**	364	22.0	364	22.0	356	22.5	356	22.5	**356**	**22.5**
447.dealII	226	50.7	227	50.4	**227**	**50.5**	226	50.7	227	50.4	**227**	**50.5**
450.soplex	190	43.9	**190**	**43.9**	193	43.3	190	43.9	**190**	**43.9**	193	43.3
453.povray	**124**	**42.7**	125	42.4	124	42.8	**104**	**50.9**	105	50.7	103	51.6
454.calculix	**199**	**41.5**	198	41.7	199	41.5	**184**	**44.8**	184	44.9	184	44.8
459.GemsFDTD	52.4	202	53.2	199	**52.6**	**202**	48.3	220	47.9	221	**48.1**	**220**
465.tonto	**291**	**33.8**	293	33.6	291	33.9	**229**	**42.9**	229	43.0	229	42.9
470.lbm	21.6	636	21.2	648	**21.6**	**636**	21.6	636	21.2	648	**21.6**	**636**
481.wrf	118	94.3	119	93.8	**119**	**94.0**	118	94.3	119	93.8	**119**	**94.0**
482.sphinx3	302	64.6	300	64.9	**301**	**64.9**	300	65.0	**299**	**65.3**	298	65.4

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
```

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"
```

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General Notes (Continued)

```
OMP_NUM_THREADS = "24"

 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>

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```

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
```

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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`

470.lbm: `basepeak = yes`

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

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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: `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`

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.20131009.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.20131009.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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