SPEC® CFP2006 Result
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Fujitsu

CELSIUS C740, Intel Xeon E5-1630 v3, 3.7 GHz

$SPECfp^{®}2006 =$ 92.4
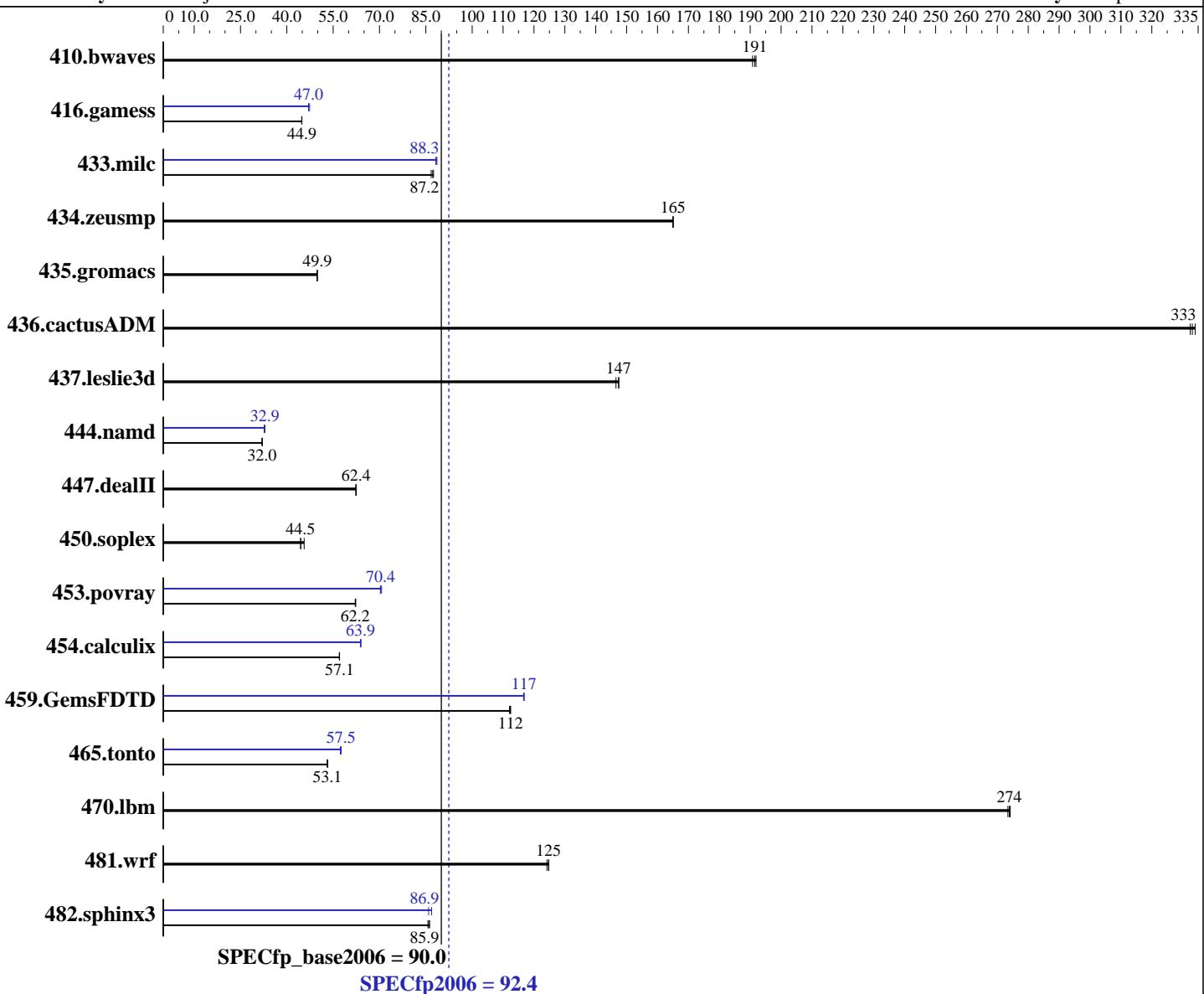
$SPECfp\_base2006 =$ 90.0

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

Test date: May-2015
Hardware Availability: May-2015
Software Availability: Sep-2014

Benchmark	Result
410.bwaves	191
416.gamess	47.0 / 44.9
433.milc	88.3 / 87.2
434.zeusmp	165
435.gromacs	49.9
436.cactusADM	333
437.leslie3d	147
444.namd	32.9 / 32.0
447.dealII	62.4
450.soplex	44.5
453.povray	70.4 / 62.2
454.calculix	63.9 / 57.1
459.GemsFDTD	117 / 112
465.tonto	57.5 / 53.1
470.lbm	274
481.wrf	125
482.sphinx3	86.9 / 85.9

SPECfp_base2006 = 90.0
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Hardware

CPU Name: Intel Xeon E5-1630 v3
CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz: 3700
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 7.1 (Maipo)
Kernel 3.10.0-229.el7.x86_64
Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;
Fortran: Version 15.0.0.090 of Intel Fortran Studio XE for Linux
Auto Parallel: Yes
File System: xfs

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L3 Cache:	10 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
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	70.8	192	**71.0**	**191**	71.2	191	70.8	192	**71.0**	**191**	71.2	191
416.gamess	436	44.9	437	44.8	**436**	**44.9**	**416**	**47.0**	413	47.4	416	47.0
433.milc	105	87.5	106	86.7	**105**	**87.2**	**104**	**88.3**	104	88.6	104	88.2
434.zeusmp	55.2	165	55.1	165	**55.1**	**165**	55.2	165	55.1	165	**55.1**	**165**
435.gromacs	143	49.8	**143**	**49.9**	143	49.9	143	49.8	**143**	**49.9**	143	49.9
436.cactusADM	35.9	332	35.8	334	**35.9**	**333**	35.9	332	35.8	334	**35.9**	**333**
437.leslie3d	64.1	147	**63.8**	**147**	63.7	147	64.1	147	**63.8**	**147**	63.7	147
444.namd	**250**	**32.0**	250	32.0	251	32.0	244	32.9	**244**	**32.9**	245	32.7
447.dealII	**183**	**62.4**	183	62.4	183	62.4	**183**	**62.4**	183	62.4	183	62.4
450.soplex	**187**	**44.5**	188	44.5	183	45.6	**187**	**44.5**	188	44.5	183	45.6
453.povray	85.4	62.3	**85.5**	**62.2**	85.6	62.1	**75.6**	**70.4**	75.3	70.7	75.7	70.3
454.calculix	145	57.0	145	57.1	**145**	**57.1**	129	63.8	**129**	**63.9**	129	64.0
459.GemsFDTD	94.7	112	**94.4**	**112**	94.4	112	90.8	117	91.0	117	**90.9**	**117**
465.tonto	185	53.1	185	53.3	**185**	**53.1**	172	57.3	171	57.6	**171**	**57.5**
470.lbm	50.1	274	**50.2**	**274**	50.3	273	50.1	274	**50.2**	**274**	50.3	273
481.wrf	89.9	124	89.5	125	**89.6**	**125**	89.9	124	89.5	125	**89.6**	**125**
482.sphinx3	226	86.2	**227**	**85.9**	227	85.7	224	86.9	**224**	**86.9**	227	85.9

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: default

General Notes

    Environment variables set by runspec before the start of the run:
    KMP_AFFINITY = "granularity=fine,compact,1,0"
    LD_LIBRARY_PATH = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"
    OMP_NUM_THREADS = "4"

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General Notes (Continued)

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB
memory using RedHat EL 7.0

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:
    -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
    -ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias
          -parallel
```

C++ benchmarks:

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Peak Optimization Flags (Continued)

444.namd: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2(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: `-xCORE-AVX2 -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-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-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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