SPEC® CFP2006 Result

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Fujitsu

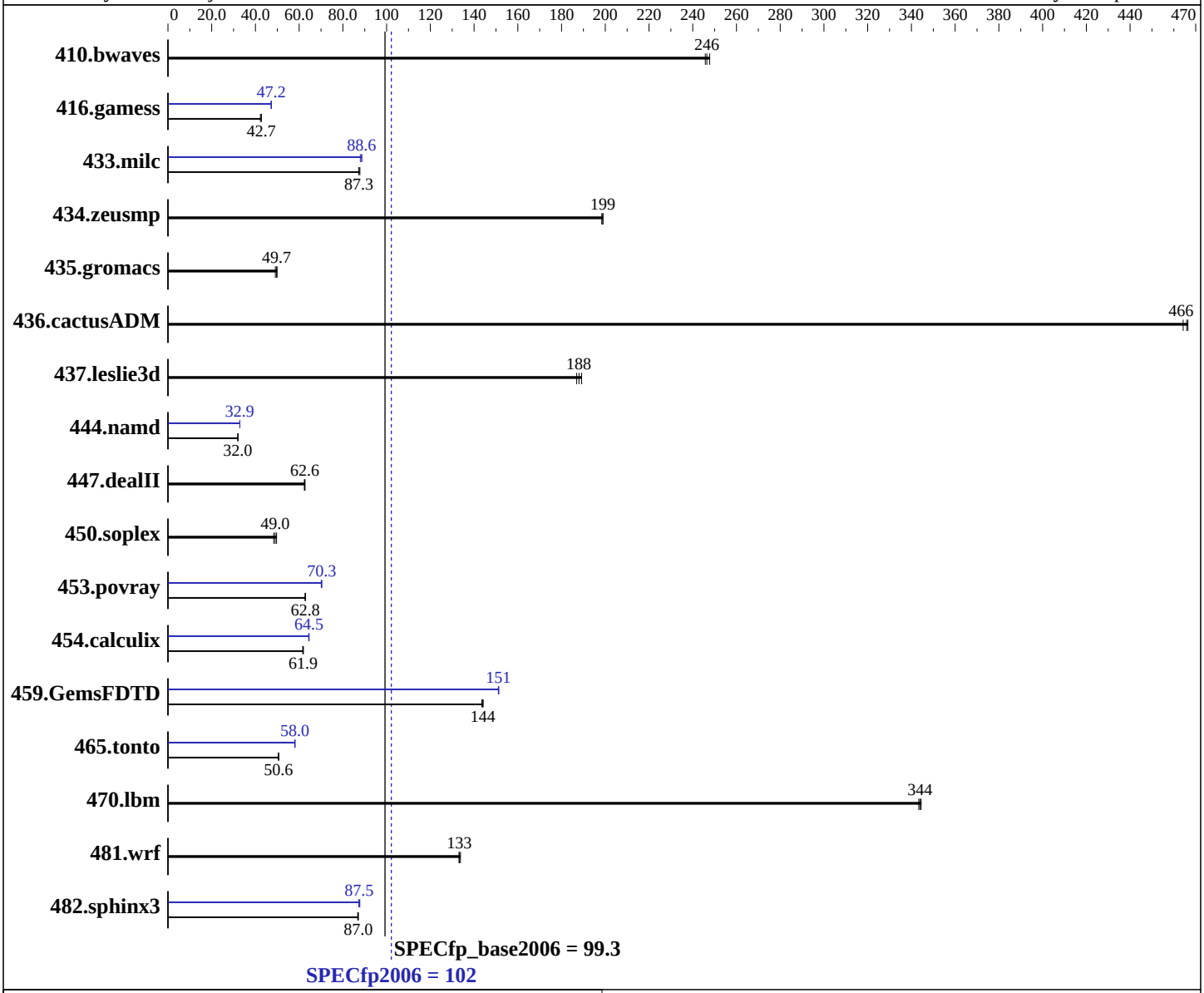
CELSIUS C740, Intel Xeon E5-1650 v3, 3.5 GHz

SPECfp®2006 = 102

SPECfp_base2006 = 99.3

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

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



Hardware

CPU Name:	Intel Xeon E5-1650 v3
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	6 cores, 1 chip, 6 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 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:	15 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)	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	54.9	248	**55.1**	**246**	55.3	246	54.9	248	**55.1**	**246**	55.3	246
416.gamess	463	42.3	**459**	**42.7**	458	42.7	415	47.1	414	47.3	**414**	**47.2**
433.milc	105	87.8	**105**	**87.3**	105	87.3	**104**	**88.6**	104	88.0	104	88.6
434.zeusmp	45.9	198	**45.8**	**199**	45.7	199	45.9	198	**45.8**	**199**	45.7	199
435.gromacs	143	49.9	145	49.1	**144**	**49.7**	143	49.9	145	49.1	**144**	**49.7**
436.cactusADM	25.6	466	**25.7**	**466**	25.7	464	25.6	466	**25.7**	**466**	25.7	464
437.leslie3d	49.7	189	**50.0**	**188**	50.3	187	49.7	189	**50.0**	**188**	50.3	187
444.namd	251	32.0	251	32.0	**251**	**32.0**	244	32.9	244	32.9	**244**	**32.9**
447.dealII	**183**	**62.6**	183	62.6	183	62.4	**183**	**62.6**	183	62.6	183	62.4
450.soplex	**170**	**49.0**	168	49.7	172	48.4	**170**	**49.0**	168	49.7	172	48.4
453.povray	84.8	62.7	84.6	62.9	**84.7**	**62.8**	75.6	70.3	75.9	70.1	**75.7**	**70.3**
454.calculix	133	61.9	134	61.6	**133**	**61.9**	128	64.4	**128**	**64.5**	128	64.6
459.GemsFDTD	73.9	144	**73.7**	**144**	73.6	144	70.2	151	70.1	151	**70.2**	**151**
465.tonto	**194**	**50.6**	195	50.5	194	50.7	169	58.2	170	58.0	**170**	**58.0**
470.lbm	40.0	343	39.9	344	**39.9**	**344**	40.0	343	39.9	344	**39.9**	**344**
481.wrf	**83.8**	**133**	83.9	133	83.5	134	**83.8**	**133**	83.9	133	83.5	134
482.sphinx3	225	86.8	224	87.0	**224**	**87.0**	222	87.8	**223**	**87.5**	223	87.3

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 = "6"
```

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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

Continued on next page

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:

Continued on next page

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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Tested with SPEC CPU2006 v1.2.
Report generated on Tue Jun 30 16:16:16 2015 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 June 2015.