



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = **105**

CELSIUS C740, Intel Xeon E5-2699 v3, 2.3 GHz

SPECfp\_base2006 = **99.6**

CPU2006 license: 19

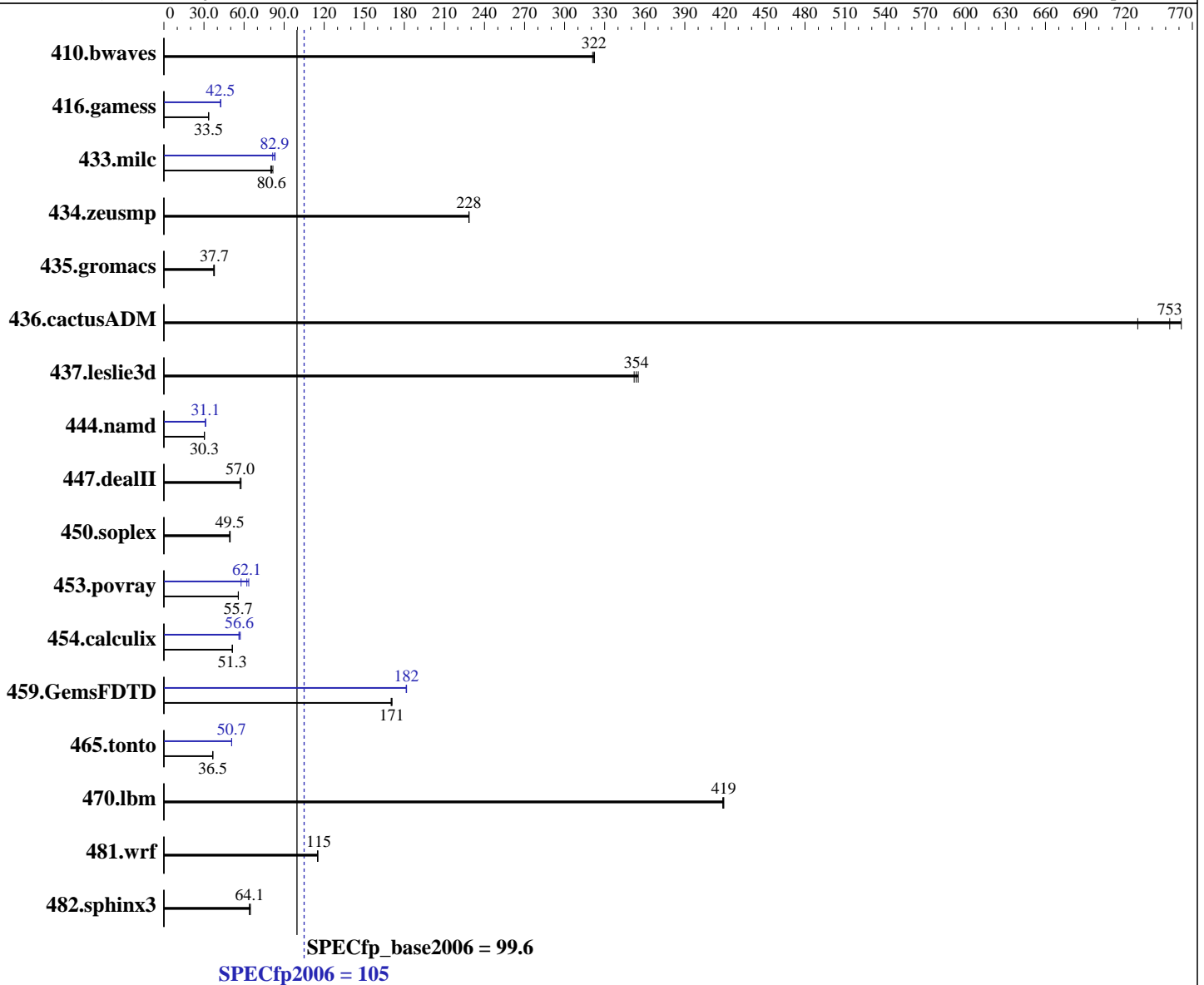
Test date: Jun-2015

Test sponsor: Fujitsu

Hardware Availability: May-2015

Tested by: Fujitsu

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2699 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 18 cores, 1 chip, 18 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: 45 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	<b><u>42.2</u></b>	<b><u>322</u></b>	42.3	321	42.2	322	<b><u>42.2</u></b>	<b><u>322</u></b>	42.3	321	42.2	322
416.gamess	584	33.5	587	33.3	<b><u>584</u></b>	<b><u>33.5</u></b>	461	42.4	459	42.6	<b><u>461</u></b>	<b><u>42.5</u></b>
433.milc	112	81.6	115	80.0	<b><u>114</u></b>	<b><u>80.6</u></b>	<b><u>111</u></b>	<b><u>82.9</u></b>	113	81.4	110	83.3
434.zeusmp	<b><u>39.8</u></b>	<b><u>228</u></b>	39.9	228	39.8	229	<b><u>39.8</u></b>	<b><u>228</u></b>	39.9	228	39.8	229
435.gromacs	189	37.8	<b><u>189</u></b>	<b><u>37.7</u></b>	192	37.2	189	37.8	<b><u>189</u></b>	<b><u>37.7</u></b>	192	37.2
436.cactusADM	<b><u>15.9</u></b>	<b><u>753</u></b>	15.7	762	16.4	729	<b><u>15.9</u></b>	<b><u>753</u></b>	15.7	762	16.4	729
437.leslie3d	26.5	355	<b><u>26.6</u></b>	<b><u>354</u></b>	26.7	352	26.5	355	<b><u>26.6</u></b>	<b><u>354</u></b>	26.7	352
444.namd	<b><u>265</u></b>	<b><u>30.3</u></b>	264	30.3	265	30.3	258	31.1	258	31.1	<b><u>258</u></b>	<b><u>31.1</u></b>
447.dealII	<b><u>201</u></b>	<b><u>57.0</u></b>	201	57.0	198	57.8	<b><u>201</u></b>	<b><u>57.0</u></b>	201	57.0	198	57.8
450.soplex	168	49.6	170	49.2	<b><u>169</u></b>	<b><u>49.5</u></b>	168	49.6	170	49.2	<b><u>169</u></b>	<b><u>49.5</u></b>
453.povray	95.4	55.8	95.6	55.7	<b><u>95.5</u></b>	<b><u>55.7</u></b>	92.1	57.8	83.7	63.5	<b><u>85.7</u></b>	<b><u>62.1</u></b>
454.calculix	<b><u>161</u></b>	<b><u>51.3</u></b>	161	51.3	161	51.1	144	57.2	<b><u>146</u></b>	<b><u>56.6</u></b>	147	56.2
459.GemsFDTD	<b><u>62.2</u></b>	<b><u>171</u></b>	62.1	171	62.4	170	58.5	181	<b><u>58.4</u></b>	<b><u>182</u></b>	58.4	182
465.tonto	269	36.5	<b><u>269</u></b>	<b><u>36.5</u></b>	268	36.7	194	50.7	194	50.7	<b><u>194</u></b>	<b><u>50.7</u></b>
470.lbm	32.8	418	32.8	419	<b><u>32.8</u></b>	<b><u>419</u></b>	32.8	418	32.8	419	<b><u>32.8</u></b>	<b><u>419</u></b>
481.wrf	97.2	115	<b><u>97.0</u></b>	<b><u>115</u></b>	97.0	115	97.2	115	<b><u>97.0</u></b>	<b><u>115</u></b>	97.0	115
482.sphinx3	<b><u>304</u></b>	<b><u>64.1</u></b>	304	64.1	301	64.8	<b><u>304</u></b>	<b><u>64.1</u></b>	304	64.1	301	64.8

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 = "18"

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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: `basepeak = yes`

C++ benchmarks:

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`

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## Peak Optimization Flags (Continued)

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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