



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = **105**

PRIMERGY RX2540 M1, Intel Xeon E5-2637 v3, 3.5 GHz

SPECfp\_base2006 = **103**

CPU2006 license: 19

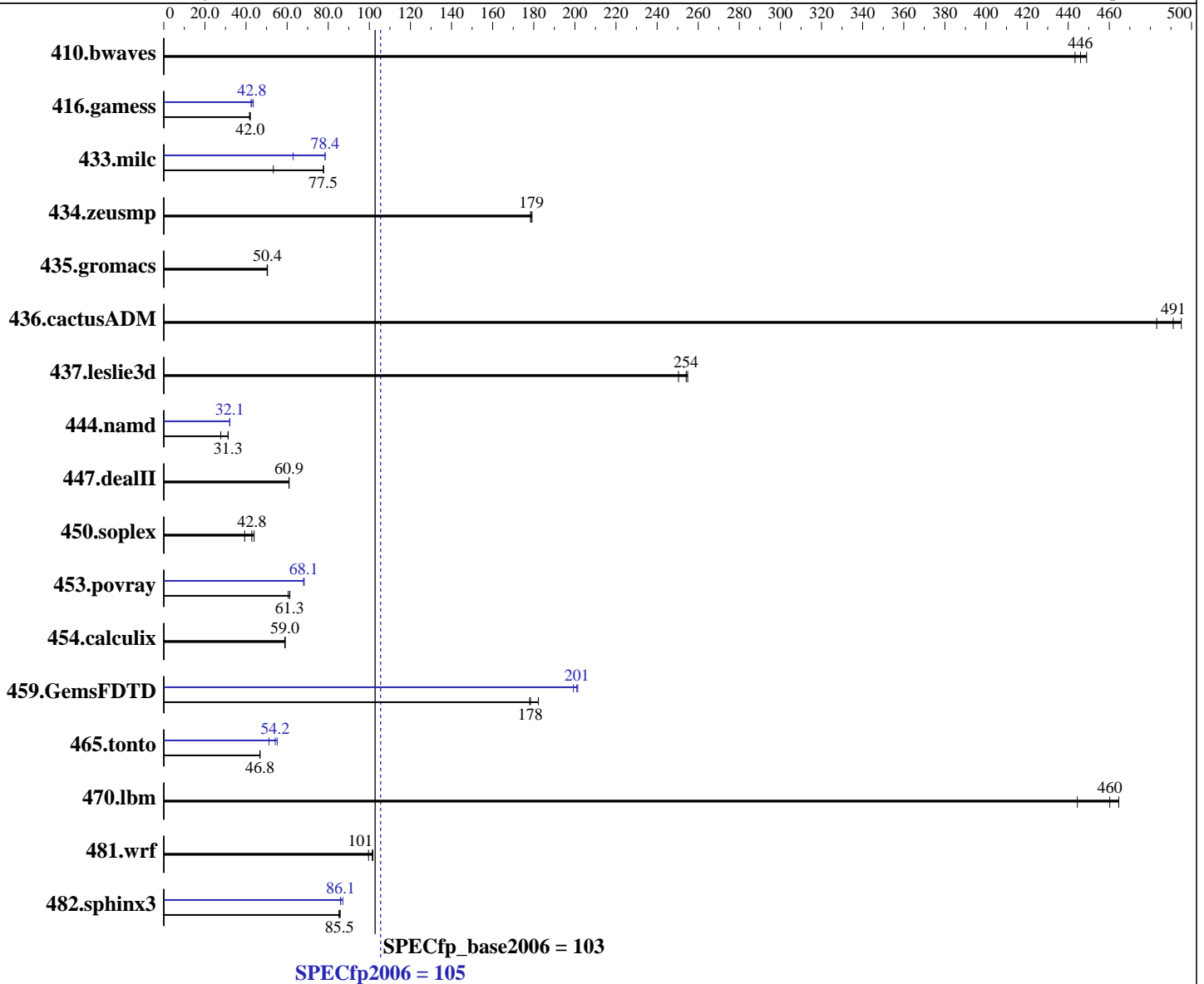
Test date: Dec-2014

Test sponsor: Fujitsu

Hardware Availability: Sep-2014

Tested by: Fujitsu

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2637 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3500  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1,2 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 7.0 (Maipo)  
 Kernel 3.10.0-123.8.1.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  
 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	30.7	443	<b><u>30.5</u></b>	<b><u>446</u></b>	30.3	449	30.7	443	<b><u>30.5</u></b>	<b><u>446</u></b>	30.3	449
416.gamess	466	42.1	<b><u>466</u></b>	<b><u>42.0</u></b>	470	41.7	<b><u>457</u></b>	<b><u>42.8</u></b>	449	43.6	462	42.4
433.milc	172	53.3	118	77.8	<b><u>118</u></b>	<b><u>77.5</u></b>	146	62.9	<b><u>117</u></b>	<b><u>78.4</u></b>	117	78.5
434.zeusmp	50.8	179	<b><u>50.9</u></b>	<b><u>179</u></b>	51.0	178	50.8	179	<b><u>50.9</u></b>	<b><u>179</u></b>	51.0	178
435.gromacs	142	50.4	<b><u>142</u></b>	<b><u>50.4</u></b>	142	50.3	142	50.4	<b><u>142</u></b>	<b><u>50.4</u></b>	142	50.3
436.cactusADM	24.7	483	24.1	495	<b><u>24.3</u></b>	<b><u>491</u></b>	24.7	483	24.1	495	<b><u>24.3</u></b>	<b><u>491</u></b>
437.leslie3d	36.9	255	<b><u>37.0</u></b>	<b><u>254</u></b>	37.5	250	36.9	255	<b><u>37.0</u></b>	<b><u>254</u></b>	37.5	250
444.namd	289	27.7	256	31.3	<b><u>257</u></b>	<b><u>31.3</u></b>	250	32.1	250	32.1	<b><u>250</u></b>	<b><u>32.1</u></b>
447.dealII	<b><u>188</u></b>	<b><u>60.9</u></b>	188	60.9	188	61.0	<b><u>188</u></b>	<b><u>60.9</u></b>	188	60.9	188	61.0
450.soplex	190	43.9	212	39.3	<b><u>195</u></b>	<b><u>42.8</u></b>	190	43.9	212	39.3	<b><u>195</u></b>	<b><u>42.8</u></b>
453.povray	86.7	61.3	87.9	60.5	<b><u>86.8</u></b>	<b><u>61.3</u></b>	77.9	68.3	78.2	68.1	<b><u>78.1</u></b>	<b><u>68.1</u></b>
454.calculix	140	58.8	<b><u>140</u></b>	<b><u>59.0</u></b>	140	59.0	140	58.8	<b><u>140</u></b>	<b><u>59.0</u></b>	140	59.0
459.GemsFDTD	59.6	178	58.2	182	<b><u>59.5</u></b>	<b><u>178</u></b>	<b><u>52.8</u></b>	<b><u>201</u></b>	52.7	201	53.2	199
465.tonto	<b><u>210</u></b>	<b><u>46.8</u></b>	210	46.8	210	46.8	178	55.2	192	51.1	<b><u>181</u></b>	<b><u>54.2</u></b>
470.lbm	29.6	465	<b><u>29.9</u></b>	<b><u>460</u></b>	30.9	444	29.6	465	<b><u>29.9</u></b>	<b><u>460</u></b>	30.9	444
481.wrf	112	99.6	110	102	<b><u>110</u></b>	<b><u>101</u></b>	112	99.6	110	102	<b><u>110</u></b>	<b><u>101</u></b>
482.sphinx3	<b><u>228</u></b>	<b><u>85.5</u></b>	227	85.8	229	85.2	227	85.9	<b><u>226</u></b>	<b><u>86.1</u></b>	224	87.1

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  
 QPI snoop mode: Home Snoop  
 COD Enable = Disabled, Early Snoop = Disabled  
 CPU C1E Support = Disabled



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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 = "/home/SPECcpu2006/libs/32:/home/SPECcpu2006/libs/64:/home/SPECcpu2006/sh"

OMP\_NUM\_THREADS = "8"

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



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## Base Optimization Flags

C benchmarks:

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

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

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## Peak Optimization Flags (Continued)

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

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: basepeak = yes

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>



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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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