



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®2006 = **115**

PRIMERGY BX2560 M1, Intel Xeon E5-2698 v3, 2.3 GHz

SPECfp\_base2006 = **108**

CPU2006 license: 19

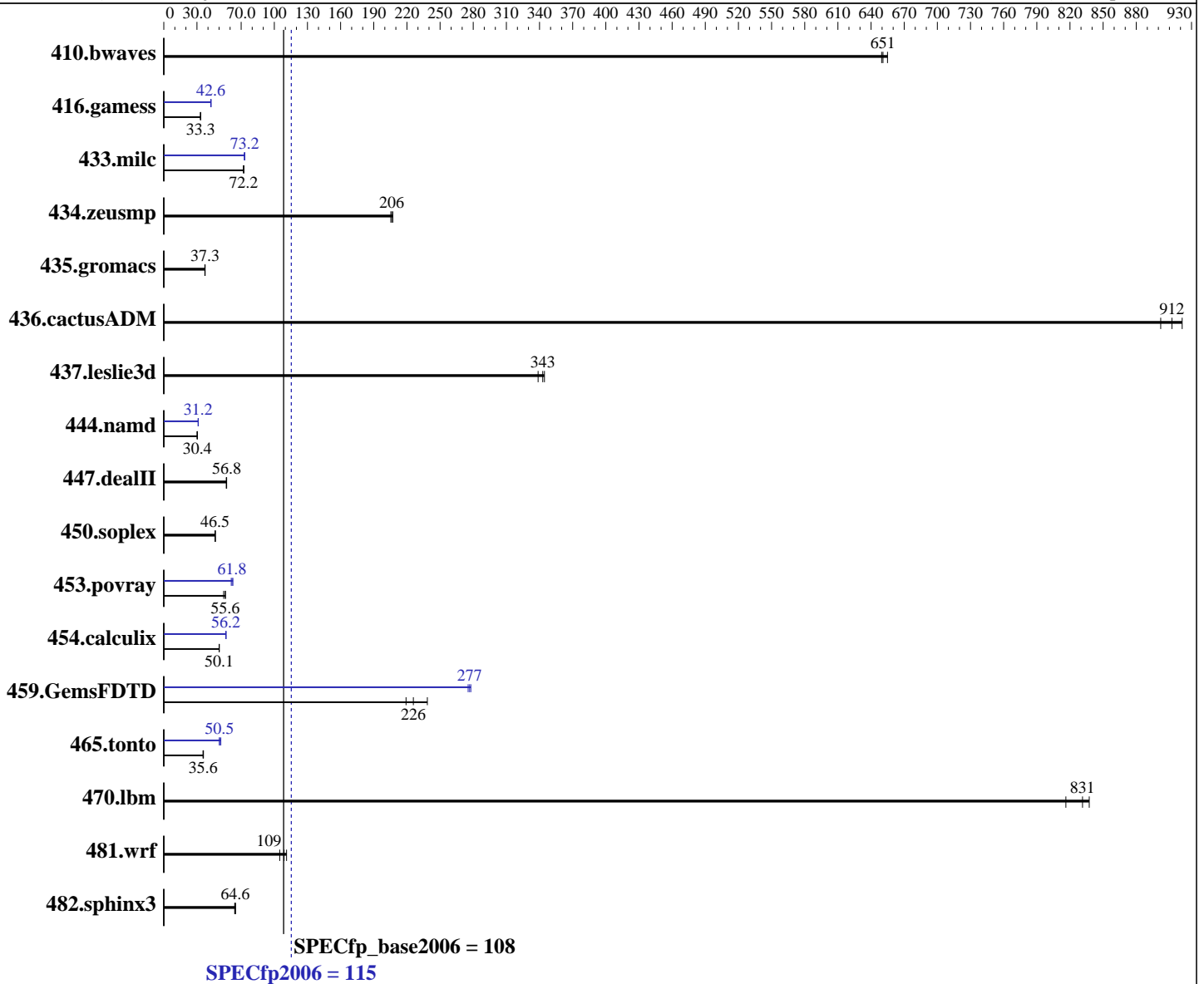
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2015

Hardware Availability: Sep-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2698 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 2300  
 FPU: Integrated  
 CPU(s) enabled: 32 cores, 2 chips, 16 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: 40 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 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	20.9	650	<b><u>20.9</u></b>	<b><u>651</u></b>	20.8	655	20.9	650	<b><u>20.9</u></b>	<b><u>651</u></b>	20.8	655
416.gamess	590	33.2	<b><u>588</u></b>	<b><u>33.3</u></b>	587	33.3	<b><u>460</u></b>	<b><u>42.6</u></b>	457	42.8	461	42.5
433.milc	<b><u>127</u></b>	<b><u>72.2</u></b>	127	72.5	127	72.1	<b><u>125</u></b>	<b><u>73.2</u></b>	126	72.8	125	73.3
434.zeusmp	<b><u>44.1</u></b>	<b><u>206</u></b>	44.3	205	43.9	207	<b><u>44.1</u></b>	<b><u>206</u></b>	44.3	205	43.9	207
435.gromacs	191	37.4	<b><u>191</u></b>	<b><u>37.3</u></b>	192	37.1	191	37.4	<b><u>191</u></b>	<b><u>37.3</u></b>	192	37.1
436.cactusADM	13.2	902	13.0	922	<b><u>13.1</u></b>	<b><u>912</u></b>	13.2	902	13.0	922	<b><u>13.1</u></b>	<b><u>912</u></b>
437.leslie3d	27.8	339	<b><u>27.4</u></b>	<b><u>343</u></b>	27.3	344	27.8	339	<b><u>27.4</u></b>	<b><u>343</u></b>	27.3	344
444.namd	267	30.1	264	30.4	<b><u>264</u></b>	<b><u>30.4</u></b>	<b><u>257</u></b>	<b><u>31.2</u></b>	259	31.0	257	31.2
447.dealII	<b><u>201</u></b>	<b><u>56.8</u></b>	202	56.5	201	56.9	<b><u>201</u></b>	<b><u>56.8</u></b>	202	56.5	201	56.9
450.soplex	179	46.6	<b><u>179</u></b>	<b><u>46.5</u></b>	180	46.5	179	46.6	<b><u>179</u></b>	<b><u>46.5</u></b>	180	46.5
453.povray	98.2	54.2	<b><u>95.6</u></b>	<b><u>55.6</u></b>	95.4	55.7	<b><u>86.1</u></b>	<b><u>61.8</u></b>	87.2	61.0	85.0	62.6
454.calculix	165	50.1	<b><u>165</u></b>	<b><u>50.1</u></b>	165	50.1	147	56.2	146	56.3	<b><u>147</u></b>	<b><u>56.2</u></b>
459.GemsFDTD	<b><u>47.0</u></b>	<b><u>226</u></b>	48.4	219	44.5	238	38.2	278	38.5	275	<b><u>38.3</u></b>	<b><u>277</u></b>
465.tonto	274	35.9	<b><u>276</u></b>	<b><u>35.6</u></b>	277	35.6	196	50.3	<b><u>195</u></b>	<b><u>50.5</u></b>	191	51.6
470.lbm	<b><u>16.5</u></b>	<b><u>831</u></b>	16.8	816	16.4	837	<b><u>16.5</u></b>	<b><u>831</u></b>	16.8	816	16.4	837
481.wrf	106	105	<b><u>103</u></b>	<b><u>109</u></b>	101	111	106	105	<b><u>103</u></b>	<b><u>109</u></b>	101	111
482.sphinx3	304	64.1	<b><u>302</u></b>	<b><u>64.6</u></b>	300	64.9	304	64.1	<b><u>302</u></b>	<b><u>64.6</u></b>	300	64.9

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:  
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 = "32"

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: basepeak = yes

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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: -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>



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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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