



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®2006 = **113**

PRIMERGY RX2530 M1, Intel Xeon E5-2698 v3, 2.3 GHz

SPECfp\_base2006 = **107**

CPU2006 license: 19

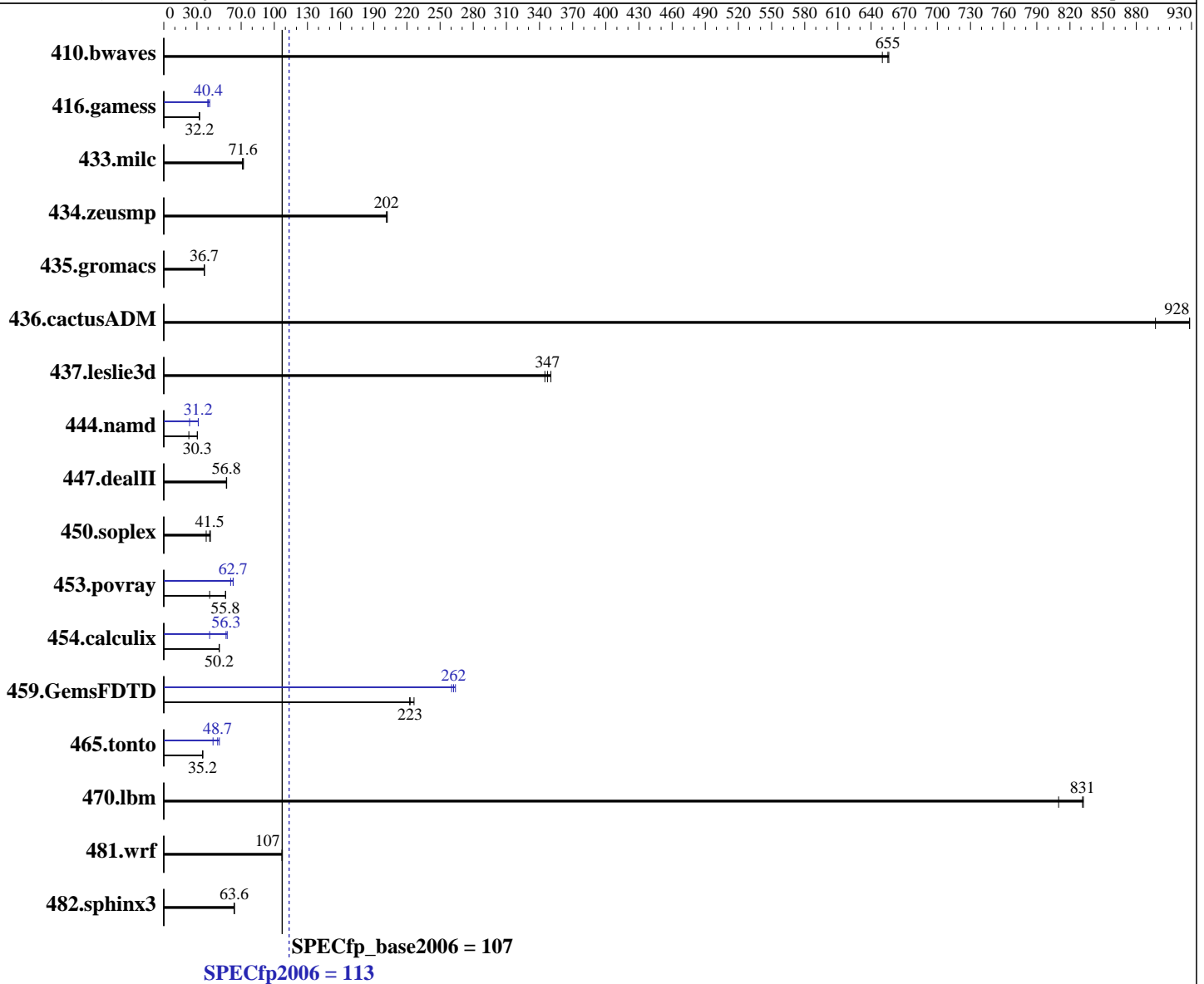
Test date: Feb-2015

Test sponsor: Fujitsu

Hardware Availability: Feb-2015

Tested by: Fujitsu

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	20.7	656	<b><u>20.7</u></b>	<b><u>655</u></b>	20.9	650	20.7	656	<b><u>20.7</u></b>	<b><u>655</u></b>
416.gamess	610	32.1	605	32.4	<b><u>607</u></b>	<b><u>32.2</u></b>	492	39.8	471	41.5	<b><u>485</u></b>	<b><u>40.4</u></b>
433.milc	<b><u>128</u></b>	<b><u>71.6</u></b>	127	72.1	129	71.1	<b><u>128</u></b>	<b><u>71.6</u></b>	127	72.1	129	71.1
434.zeusmp	<b><u>45.1</u></b>	<b><u>202</u></b>	45.0	202	45.1	202	<b><u>45.1</u></b>	<b><u>202</u></b>	45.0	202	45.1	202
435.gromacs	194	36.7	<b><u>195</u></b>	<b><u>36.7</u></b>	195	36.6	194	36.7	<b><u>195</u></b>	<b><u>36.7</u></b>	195	36.6
436.cactusADM	13.3	897	<b><u>12.9</u></b>	<b><u>928</u></b>	12.9	928	13.3	897	<b><u>12.9</u></b>	<b><u>928</u></b>	12.9	928
437.leslie3d	<b><u>27.1</u></b>	<b><u>347</u></b>	26.8	350	27.3	345	<b><u>27.1</u></b>	<b><u>347</u></b>	26.8	350	27.3	345
444.namd	264	30.4	354	22.7	<b><u>264</u></b>	<b><u>30.3</u></b>	<b><u>257</u></b>	<b><u>31.2</u></b>	344	23.3	257	31.2
447.dealII	201	56.9	<b><u>202</u></b>	<b><u>56.8</u></b>	202	56.6	201	56.9	<b><u>202</u></b>	<b><u>56.8</u></b>	202	56.6
450.soplex	<b><u>201</u></b>	<b><u>41.5</u></b>	217	38.4	198	42.2	<b><u>201</u></b>	<b><u>41.5</u></b>	217	38.4	198	42.2
453.povray	<b><u>95.3</u></b>	<b><u>55.8</u></b>	95.1	56.0	128	41.5	84.7	62.8	<b><u>84.8</u></b>	<b><u>62.7</u></b>	88.0	60.5
454.calculix	<b><u>164</u></b>	<b><u>50.2</u></b>	164	50.2	165	50.1	144	57.4	<b><u>146</u></b>	<b><u>56.3</u></b>	199	41.5
459.GemsFDTD	46.9	226	47.7	222	<b><u>47.6</u></b>	<b><u>223</u></b>	40.7	260	<b><u>40.5</u></b>	<b><u>262</u></b>	40.2	264
465.tonto	279	35.2	280	35.1	<b><u>280</u></b>	<b><u>35.2</u></b>	<b><u>202</u></b>	<b><u>48.7</u></b>	221	44.6	196	50.3
470.lbm	17.0	810	16.5	832	<b><u>16.5</u></b>	<b><u>831</u></b>	17.0	810	16.5	832	<b><u>16.5</u></b>	<b><u>831</u></b>
481.wrf	105	107	104	107	<b><u>104</u></b>	<b><u>107</u></b>	105	107	104	107	<b><u>104</u></b>	<b><u>107</u></b>
482.sphinx3	<b><u>306</u></b>	<b><u>63.6</u></b>	307	63.5	304	64.0	<b><u>306</u></b>	<b><u>63.6</u></b>	307	63.5	304	64.0

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: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

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.dealIII: 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>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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