



SPEC[®] CFP2006 Result

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Fujitsu

SPECfp[®]2006 = 115

PRIMERGY RX2540 M1, Intel Xeon E5-2699 v3, 2.3 GHz

SPECfp_base2006 = 109

CPU2006 license: 19

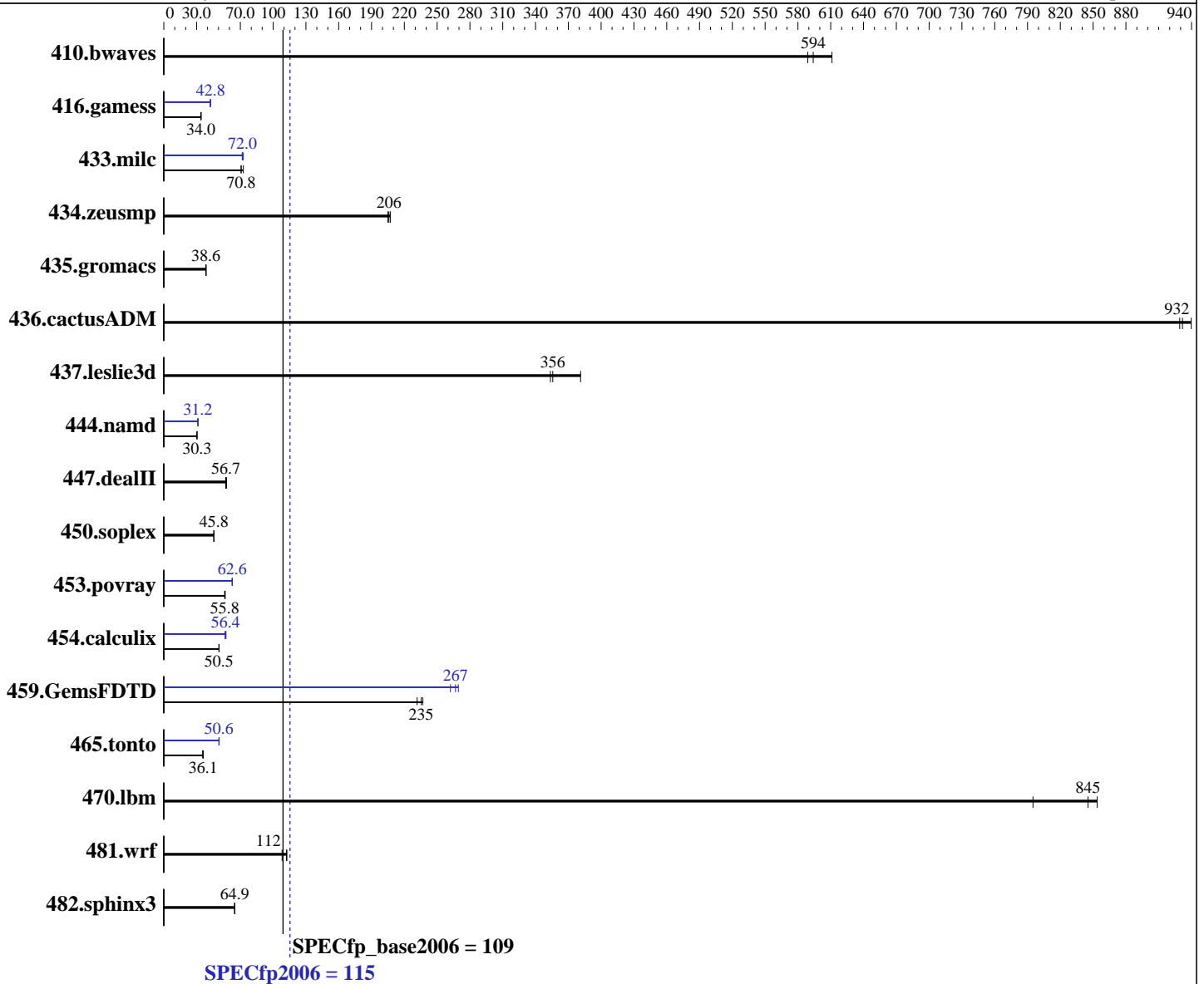
Test date: Oct-2014

Test sponsor: Fujitsu

Hardware Availability: Sep-2014

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: 36 cores, 2 chips, 18 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.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: 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	22.2	611	23.1	589	<u>22.9</u>	<u>594</u>	22.2	611	23.1	589	<u>22.9</u>	<u>594</u>
416.gamess	<u>576</u>	<u>34.0</u>	576	34.0	576	34.0	458	42.8	<u>458</u>	<u>42.8</u>	461	42.5
433.milc	<u>130</u>	<u>70.8</u>	130	70.7	126	72.7	128	71.7	126	72.8	<u>128</u>	<u>72.0</u>
434.zeusmp	43.9	207	44.4	205	<u>44.2</u>	<u>206</u>	43.9	207	44.4	205	<u>44.2</u>	<u>206</u>
435.gromacs	<u>185</u>	<u>38.6</u>	185	38.5	185	38.6	<u>185</u>	<u>38.6</u>	185	38.5	185	38.6
436.cactusADM	12.9	929	<u>12.8</u>	<u>932</u>	12.7	940	12.9	929	<u>12.8</u>	<u>932</u>	12.7	940
437.leslie3d	26.6	354	<u>26.4</u>	<u>356</u>	24.7	381	26.6	354	<u>26.4</u>	<u>356</u>	24.7	381
444.namd	264	30.3	<u>264</u>	<u>30.3</u>	264	30.4	<u>257</u>	<u>31.2</u>	257	31.2	257	31.2
447.dealII	202	56.6	<u>202</u>	<u>56.7</u>	199	57.4	202	56.6	<u>202</u>	<u>56.7</u>	199	57.4
450.soplex	182	45.9	<u>182</u>	<u>45.8</u>	182	45.7	182	45.9	<u>182</u>	<u>45.8</u>	182	45.7
453.povray	<u>95.4</u>	<u>55.8</u>	95.5	55.7	94.7	56.2	85.1	62.5	<u>85.0</u>	<u>62.6</u>	85.0	62.6
454.calculix	163	50.6	<u>163</u>	<u>50.5</u>	164	50.4	145	56.9	147	56.0	<u>146</u>	<u>56.4</u>
459.GemsFDTD	<u>45.1</u>	<u>235</u>	44.8	237	45.8	232	40.5	262	<u>39.8</u>	<u>267</u>	39.4	269
465.tonto	273	36.1	<u>273</u>	<u>36.1</u>	277	35.5	194	50.7	<u>195</u>	<u>50.6</u>	195	50.4
470.lbm	<u>16.3</u>	<u>845</u>	17.3	795	16.1	854	<u>16.3</u>	<u>845</u>	17.3	795	16.1	854
481.wrf	<u>99.6</u>	<u>112</u>	103	108	99.2	113	<u>99.6</u>	<u>112</u>	103	108	99.2	113
482.sphinx3	<u>301</u>	<u>64.9</u>	301	64.8	300	64.9	<u>301</u>	<u>64.9</u>	301	64.8	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
 CPU C1E Support = disable
 QPI snoop mode: COD = disable, Early snoop = disable



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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 = "36"

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/Fujitsu-Platform-Settings-V1.2-HSW-RevA.html>

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html>



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You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Fujitsu-Platform-Settings-V1.2-HSW-RevA.xml>

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

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For other inquiries, please contact webmaster@spec.org.

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