



SPEC[®] CFP2006 Result

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Supermicro

SuperServer F618R2-FC0
(X10DRFF-C, Intel Xeon E5-2699 v3)

SPECfp[®]2006 = **111**

SPECfp_base2006 = **105**

CPU2006 license: 001176

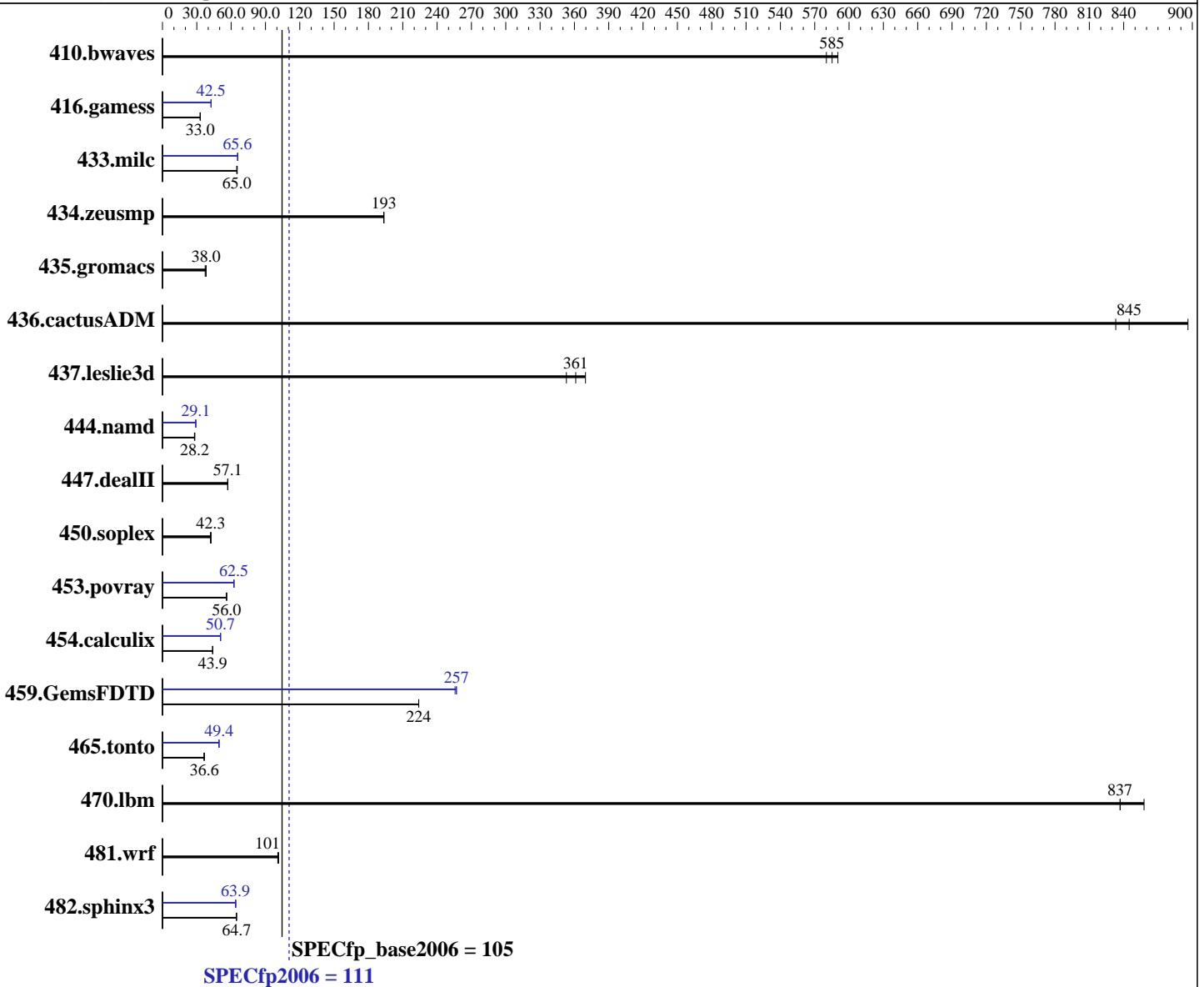
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Aug-2014

Hardware Availability: Sep-2014

Software Availability: Nov-2013



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 chips
 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 6.5, Kernel 2.6.32-431.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)

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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 2000 GB SATA II, 7200 RPM
Other Hardware: None

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	23.4	580	23.0	590	<u>23.2</u>	<u>585</u>	23.4	580	23.0	590	<u>23.2</u>	<u>585</u>
416.gamess	593	33.0	594	33.0	<u>593</u>	<u>33.0</u>	462	42.4	460	42.5	<u>461</u>	<u>42.5</u>
433.milc	<u>141</u>	<u>65.0</u>	141	65.0	140	65.4	140	65.6	<u>140</u>	<u>65.6</u>	140	65.8
434.zeusmp	<u>47.0</u>	<u>193</u>	47.0	193	47.0	193	<u>47.0</u>	<u>193</u>	47.0	193	47.0	193
435.gromacs	187	38.1	191	37.3	<u>188</u>	<u>38.0</u>	187	38.1	191	37.3	<u>188</u>	<u>38.0</u>
436.cactusADM	<u>14.1</u>	<u>845</u>	14.3	833	13.3	896	<u>14.1</u>	<u>845</u>	14.3	833	13.3	896
437.leslie3d	26.6	353	<u>26.0</u>	<u>361</u>	25.4	370	26.6	353	<u>26.0</u>	<u>361</u>	25.4	370
444.namd	284	28.2	<u>284</u>	<u>28.2</u>	287	27.9	276	29.1	<u>276</u>	<u>29.1</u>	275	29.1
447.dealII	<u>200</u>	<u>57.1</u>	200	57.1	201	57.0	<u>200</u>	<u>57.1</u>	200	57.1	201	57.0
450.soplex	199	41.9	197	42.4	<u>197</u>	<u>42.3</u>	199	41.9	197	42.4	<u>197</u>	<u>42.3</u>
453.povray	95.2	55.9	94.7	56.2	<u>95.1</u>	<u>56.0</u>	85.2	62.5	<u>85.1</u>	<u>62.5</u>	85.0	62.6
454.calculix	<u>188</u>	<u>43.9</u>	188	43.9	188	43.9	162	50.8	163	50.7	<u>163</u>	<u>50.7</u>
459.GemsFDTD	47.4	224	47.4	224	<u>47.4</u>	<u>224</u>	41.5	256	<u>41.3</u>	<u>257</u>	41.3	257
465.tonto	271	36.3	269	36.6	<u>269</u>	<u>36.6</u>	199	49.5	200	49.3	<u>199</u>	<u>49.4</u>
470.lbm	16.4	837	16.0	858	<u>16.4</u>	<u>837</u>	16.4	837	16.0	858	<u>16.4</u>	<u>837</u>
481.wrf	<u>110</u>	<u>101</u>	111	101	110	102	<u>110</u>	<u>101</u>	111	101	110	102
482.sphinx3	<u>301</u>	<u>64.7</u>	302	64.5	301	64.7	304	64.2	305	63.8	<u>305</u>	<u>63.9</u>

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 Settings:
Early Snoop = Disabled
Enforce POR = Disabled
Hyper-Threading (ALL) = Enabled
Memory Frequency = 2133



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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 = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
OMP_NUM_THREADS = "36"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

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.deallI: -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.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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.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-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.xml>

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