



# SPEC® CFP2006 Result

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## Supermicro

SPECfp®2006 = 58.9

SuperServer 5017C-MF (X9SCL-F, Intel E3-1240)

SPECfp\_base2006 = 57.5

CPU2006 license: 001176

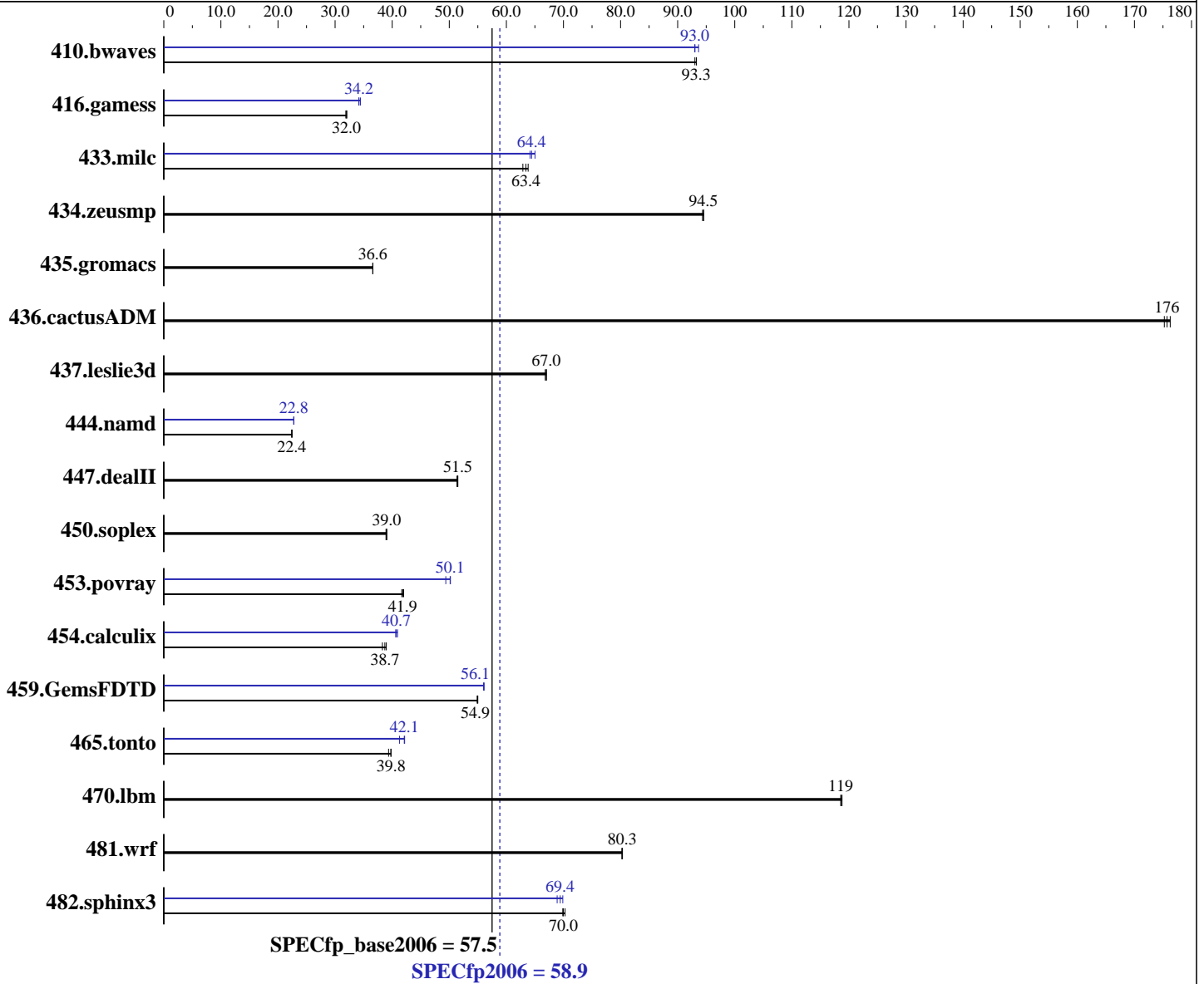
Test date: Jun-2012

Test sponsor: Supermicro

Hardware Availability: Apr-2011

Tested by: Supermicro

Software Availability: Oct-2011



### Hardware

CPU Name: Intel Xeon E3-1240  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 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 6.1, Kernel 2.6.32-131.0.15.el6.x86\_64  
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;  
 Fortran: Version 12.1.0.225 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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)  
 Disk Subsystem: 1 x 1 TB 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	<b>146</b>	<b>93.3</b>	146	93.3	146	93.0	<b>146</b>	<b>93.0</b>	146	93.0	145	93.7
416.gamess	611	32.1	<b>612</b>	<b>32.0</b>	614	31.9	<b>573</b>	<b>34.2</b>	568	34.4	573	34.2
433.milc	146	62.9	<b>145</b>	<b>63.4</b>	144	63.8	143	64.1	<b>142</b>	<b>64.4</b>	141	65.0
434.zeusmp	<b>96.3</b>	<b>94.5</b>	96.2	94.5	96.4	94.4	<b>96.3</b>	<b>94.5</b>	96.2	94.5	96.4	94.4
435.gromacs	195	36.6	<b>195</b>	<b>36.6</b>	195	36.6	195	36.6	<b>195</b>	<b>36.6</b>	195	36.6
436.cactusADM	<b>68.0</b>	<b>176</b>	67.8	176	68.2	175	<b>68.0</b>	<b>176</b>	67.8	176	68.2	175
437.leslie3d	141	66.8	<b>140</b>	<b>67.0</b>	140	67.0	141	66.8	<b>140</b>	<b>67.0</b>	140	67.0
444.namd	358	22.4	<b>358</b>	<b>22.4</b>	357	22.5	<b>352</b>	<b>22.8</b>	352	22.8	352	22.8
447.dealII	<b>222</b>	<b>51.5</b>	222	51.5	223	51.3	<b>222</b>	<b>51.5</b>	222	51.5	223	51.3
450.soplex	214	38.9	214	39.1	<b>214</b>	<b>39.0</b>	214	38.9	214	39.1	<b>214</b>	<b>39.0</b>
453.povray	128	41.7	<b>127</b>	<b>41.9</b>	127	42.0	106	50.2	108	49.4	<b>106</b>	<b>50.1</b>
454.calculix	215	38.3	<b>213</b>	<b>38.7</b>	212	39.0	<b>202</b>	<b>40.7</b>	202	40.9	203	40.6
459.GemsFDTD	<b>193</b>	<b>54.9</b>	193	54.9	193	55.0	189	56.0	<b>189</b>	<b>56.1</b>	189	56.1
465.tonto	247	39.8	250	39.4	<b>247</b>	<b>39.8</b>	<b>234</b>	<b>42.1</b>	238	41.3	233	42.2
470.lbm	116	119	116	119	<b>116</b>	<b>119</b>	116	119	116	119	<b>116</b>	<b>119</b>
481.wrf	<b>139</b>	<b>80.3</b>	139	80.3	139	80.2	<b>139</b>	<b>80.3</b>	139	80.3	139	80.2
482.sphinx3	279	69.9	<b>279</b>	<b>70.0</b>	277	70.3	283	68.9	279	69.9	<b>281</b>	<b>69.4</b>

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"  
 Transparent Huge Pages enabled with:  
 echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## General Notes

Environment variables set by runspec before the start of the run:  
 KMP\_AFFINITY = "granularity=fine,scatter"  
 LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"  
 OMP\_NUM\_THREADS = "4"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5



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## 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.lelie3d: -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

## Base Optimization Flags

C benchmarks:  
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:  
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:  
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
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## 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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32  
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

444.namd: -xAVX(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: -xAVX(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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel  
-static

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## Peak Optimization Flags (Continued)

416.gamess: -xAVX(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- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(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: -xAVX(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: -xAVX -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-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

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

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

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