



# SPEC® CFP2006 Result

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## Supermicro

SPECfp®2006 = 42.3

SuperServer 5017C-MF (X9SCL-F, Intel G840)

SPECfp\_base2006 = 41.5

CPU2006 license: 001176

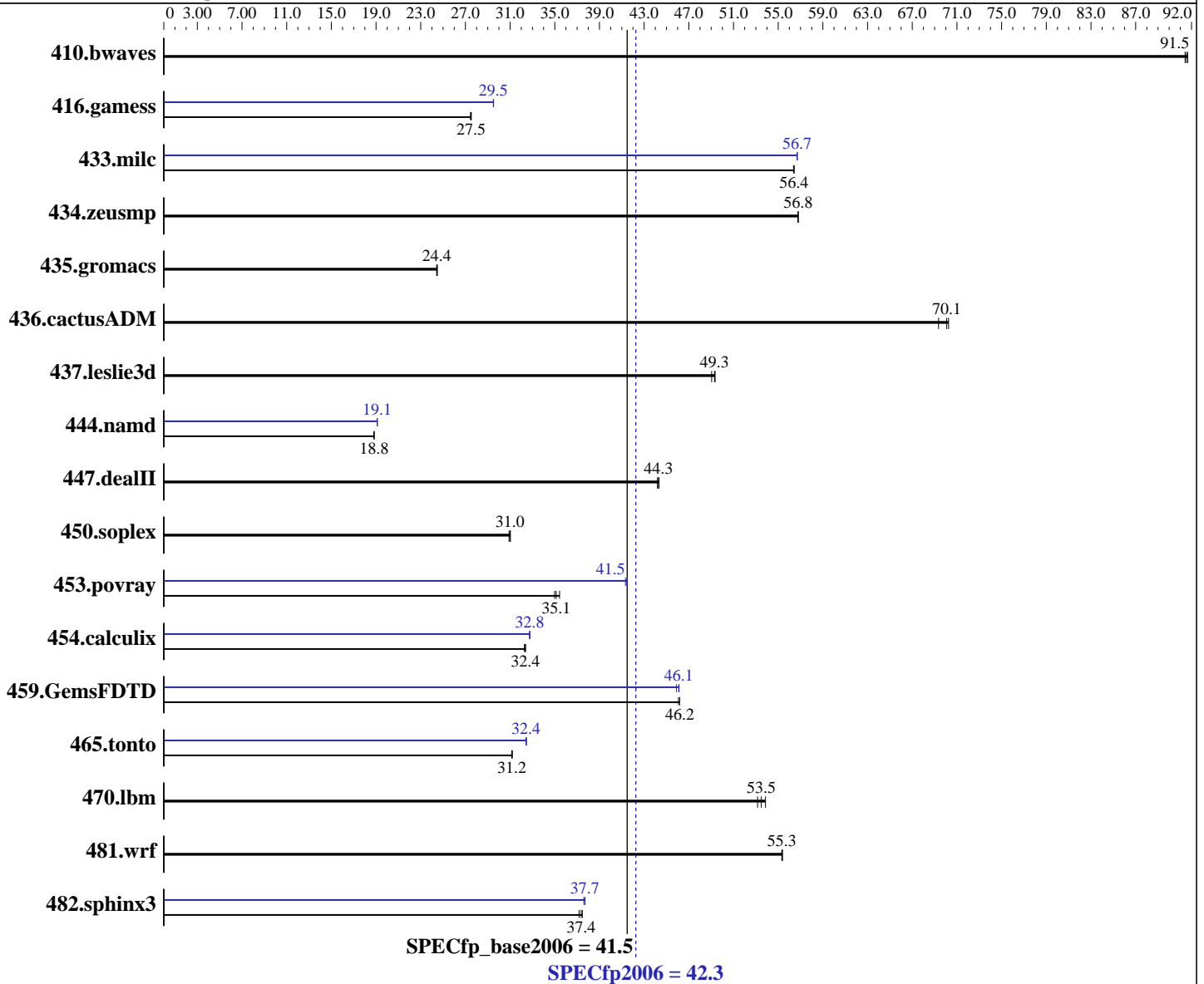
Test date: Mar-2012

Test sponsor: Supermicro

Hardware Availability: Apr-2011

Tested by: Supermicro

Software Availability: Oct-2011



### Hardware

CPU Name: Intel Pentium G840  
 CPU Characteristics:  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 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 (Santiago)  
 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

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L3 Cache: 3 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

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	<b>148</b>	<b>91.5</b>	148	91.7	149	91.4	<b>148</b>	<b>91.5</b>	148	91.7	149	91.4
416.gamess	711	27.5	713	27.5	<b>712</b>	<b>27.5</b>	663	29.5	664	29.5	<b>664</b>	<b>29.5</b>
433.milc	163	56.4	163	56.4	<b>163</b>	<b>56.4</b>	162	56.7	<b>162</b>	<b>56.7</b>	162	56.7
434.zeusmp	<b>160</b>	<b>56.8</b>	160	56.8	160	56.8	<b>160</b>	<b>56.8</b>	160	56.8	160	56.8
435.gromacs	292	24.4	<b>292</b>	<b>24.4</b>	292	24.5	292	24.4	<b>292</b>	<b>24.4</b>	292	24.5
436.cactusADM	170	70.3	<b>171</b>	<b>70.1</b>	172	69.4	170	70.3	<b>171</b>	<b>70.1</b>	172	69.4
437.leslie3d	190	49.4	192	49.0	<b>191</b>	<b>49.3</b>	190	49.4	192	49.0	<b>191</b>	<b>49.3</b>
444.namd	426	18.8	426	18.8	<b>426</b>	<b>18.8</b>	420	19.1	<b>420</b>	<b>19.1</b>	420	19.1
447.dealII	258	44.3	259	44.2	<b>258</b>	<b>44.3</b>	258	44.3	259	44.2	<b>258</b>	<b>44.3</b>
450.soplex	<b>269</b>	<b>31.0</b>	270	30.9	269	31.0	<b>269</b>	<b>31.0</b>	270	30.9	269	31.0
453.povray	<b>151</b>	<b>35.1</b>	150	35.4	152	35.0	<b>128</b>	<b>41.5</b>	129	41.3	128	41.5
454.calculix	<b>255</b>	<b>32.4</b>	255	32.4	256	32.3	252	32.8	252	32.7	<b>252</b>	<b>32.8</b>
459.GemsFDTD	230	46.1	230	46.2	<b>230</b>	<b>46.2</b>	230	46.1	<b>230</b>	<b>46.1</b>	231	45.9
465.tonto	<b>316</b>	<b>31.2</b>	315	31.2	316	31.1	<b>303</b>	<b>32.4</b>	303	32.5	303	32.4
470.lbm	255	53.9	258	53.2	<b>257</b>	<b>53.5</b>	255	53.9	258	53.2	<b>257</b>	<b>53.5</b>
481.wrf	202	55.4	<b>202</b>	<b>55.3</b>	202	55.3	202	55.4	<b>202</b>	<b>55.3</b>	202	55.3
482.sphinx3	520	37.5	524	37.2	<b>522</b>	<b>37.4</b>	517	37.7	518	37.6	<b>517</b>	<b>37.7</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"

## 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 = "2"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
 Transparent Huge Pages enabled with:  
 echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled



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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.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

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias



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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: -xSSE4.2(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: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

444.namd: -xSSE4.2(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: -xSSE4.2(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

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## Peak Optimization Flags (Continued)

416.gamess: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2 -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-linux64.20111122.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-linux64.20111122.xml>

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

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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