



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

### SPECfp<sup>®</sup>\_rate2006 = 62.7

### SuperServer 1017C-TF (X9SCL-F, Intel G840)

### SPECfp\_rate\_base2006 = 61.5

CPU2006 license: 001176

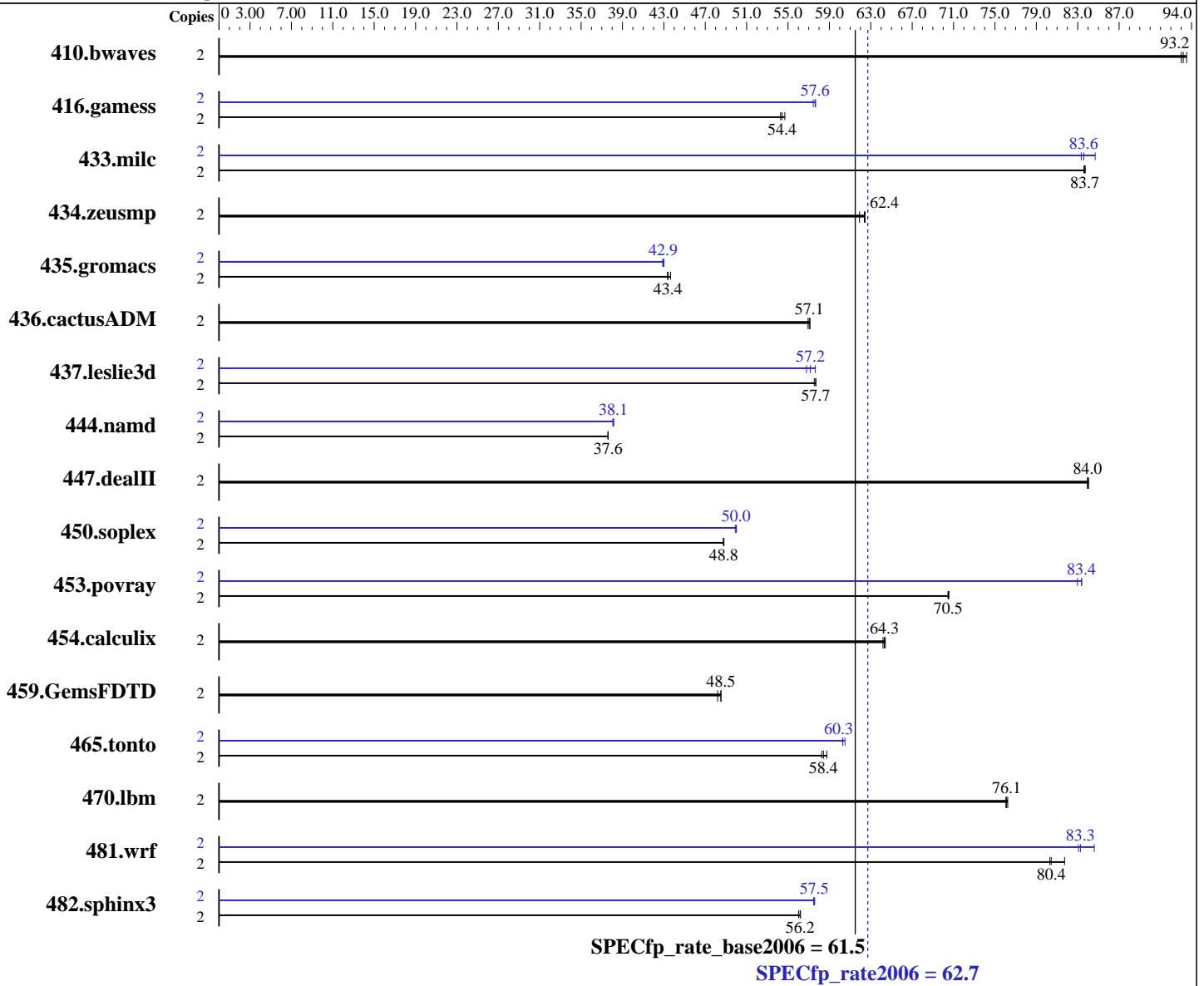
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2012

Hardware Availability: Apr-2011

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, 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: No  
 File System: ext4  
 System State: Run level 3 (multi-user)

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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 500 GB SATA II, 7200 RPM  
Other Hardware: None

Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	291	93.5	<u>292</u>	<u>93.2</u>	292	93.0	2	291	93.5	<u>292</u>	<u>93.2</u>	292	93.0
416.gamess	2	<u>720</u>	<u>54.4</u>	721	54.3	716	54.7	2	679	57.7	682	57.4	<u>680</u>	<u>57.6</u>
433.milc	2	219	83.7	220	83.6	<u>219</u>	<u>83.7</u>	2	217	84.7	<u>220</u>	<u>83.6</u>	220	83.3
434.zeusmp	2	291	62.4	<u>292</u>	<u>62.4</u>	294	61.9	2	291	62.4	<u>292</u>	<u>62.4</u>	294	61.9
435.gromacs	2	<u>329</u>	<u>43.4</u>	329	43.4	327	43.6	2	333	42.9	<u>333</u>	<u>42.9</u>	332	43.0
436.cactusADM	2	420	56.9	418	57.1	<u>419</u>	<u>57.1</u>	2	420	56.9	418	57.1	<u>419</u>	<u>57.1</u>
437.leslie3d	2	326	57.7	327	57.5	<u>326</u>	<u>57.7</u>	2	331	56.8	326	57.6	<u>329</u>	<u>57.2</u>
444.namd	2	<u>426</u>	<u>37.6</u>	427	37.6	426	37.6	2	421	38.1	421	38.1	<u>421</u>	<u>38.1</u>
447.dealII	2	273	83.9	272	84.1	<u>272</u>	<u>84.0</u>	2	273	83.9	272	84.1	<u>272</u>	<u>84.0</u>
450.soplex	2	342	48.8	<u>342</u>	<u>48.8</u>	342	48.7	2	333	50.0	<u>334</u>	<u>50.0</u>	334	49.9
453.povray	2	<u>151</u>	<u>70.5</u>	151	70.5	151	70.6	2	128	83.0	<u>128</u>	<u>83.4</u>	128	83.4
454.calculix	2	256	64.4	257	64.2	<u>257</u>	<u>64.3</u>	2	256	64.4	257	64.2	<u>257</u>	<u>64.3</u>
459.GemsFDTD	2	440	48.2	437	48.5	<u>437</u>	<u>48.5</u>	2	440	48.2	437	48.5	<u>437</u>	<u>48.5</u>
465.tonto	2	338	58.3	<u>337</u>	<u>58.4</u>	335	58.7	2	<u>326</u>	<u>60.3</u>	327	60.3	325	60.5
470.lbm	2	361	76.1	360	76.2	<u>361</u>	<u>76.1</u>	2	361	76.1	360	76.2	<u>361</u>	<u>76.1</u>
481.wrf	2	<u>278</u>	<u>80.4</u>	273	81.7	278	80.3	2	<u>268</u>	<u>83.3</u>	269	83.1	264	84.6
482.sphinx3	2	696	56.0	694	56.2	<u>694</u>	<u>56.2</u>	2	<u>678</u>	<u>57.5</u>	678	57.5	677	57.6

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages disabled with:  
echo never > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled



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## General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/usr/cpu2006/libs/32:/home/usr/cpu2006/libs/64"

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

## 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

## Base Optimization Flags

C benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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  
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

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**Tested by:** Supermicro

**Software Availability:** Oct-2011

## Peak Portability Flags (Continued)

481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX

## 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) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -static -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -opt-mem-layout-trans=3  
-unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: basepeak = yes

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

459.GemsFDTD: basepeak = yes

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) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

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## Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-prefetch -static -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

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

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