



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

SuperServer F627G2-FT+  
(X9DRFF-iG+ , Intel Xeon E5-2667 v2)

SPECfp<sup>®</sup>2006 = 113

SPECfp\_base2006 = 108

CPU2006 license: 001176

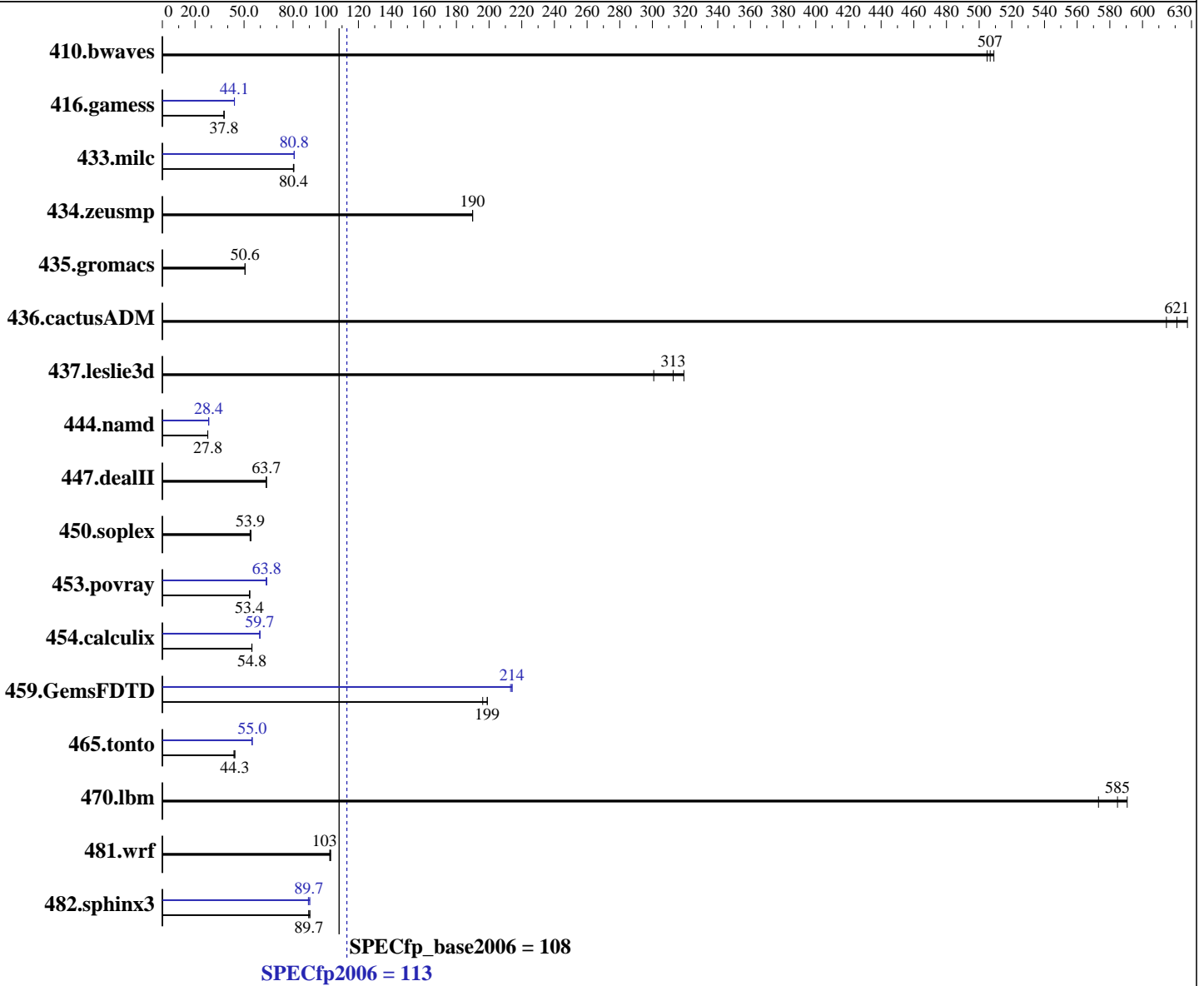
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Oct-2013



**Hardware**

CPU Name: Intel Xeon E5-2667 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip  
 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 6.4, Kernel 2.6.32-358.23.2.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: 25 MB I+D on chip per chip  
Other Cache: None  
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)  
Disk Subsystem: 1 x 512 GB SATA III, SSD  
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	26.9	505	<b><u>26.8</u></b>	<b><u>507</u></b>	26.7	509	26.9	505	<b><u>26.8</u></b>	<b><u>507</u></b>	26.7	509
416.gamess	519	37.7	<b><u>518</u></b>	<b><u>37.8</u></b>	518	37.8	<b><u>444</u></b>	<b><u>44.1</u></b>	444	44.1	444	44.1
433.milc	<b><u>114</u></b>	<b><u>80.4</u></b>	114	80.5	114	80.2	<b><u>114</u></b>	<b><u>80.8</u></b>	114	80.6	114	80.8
434.zeusmp	47.9	190	47.9	190	<b><u>47.9</u></b>	<b><u>190</u></b>	47.9	190	47.9	190	<b><u>47.9</u></b>	<b><u>190</u></b>
435.gromacs	141	50.6	<b><u>141</u></b>	<b><u>50.6</u></b>	141	50.7	141	50.6	<b><u>141</u></b>	<b><u>50.6</u></b>	141	50.7
436.cactusADM	<b><u>19.2</u></b>	<b><u>621</u></b>	19.0	628	19.4	615	<b><u>19.2</u></b>	<b><u>621</u></b>	19.0	628	19.4	615
437.leslie3d	<b><u>30.1</u></b>	<b><u>313</u></b>	29.4	319	31.2	301	<b><u>30.1</u></b>	<b><u>313</u></b>	29.4	319	31.2	301
444.namd	288	27.8	289	27.8	<b><u>289</u></b>	<b><u>27.8</u></b>	283	28.4	<b><u>283</u></b>	<b><u>28.4</u></b>	283	28.3
447.dealII	<b><u>180</u></b>	<b><u>63.7</u></b>	180	63.6	180	63.7	<b><u>180</u></b>	<b><u>63.7</u></b>	180	63.6	180	63.7
450.soplex	154	54.3	<b><u>155</u></b>	<b><u>53.9</u></b>	155	53.7	154	54.3	<b><u>155</u></b>	<b><u>53.9</u></b>	155	53.7
453.povray	<b><u>99.6</u></b>	<b><u>53.4</u></b>	99.4	53.5	99.9	53.3	83.7	63.5	83.3	63.9	<b><u>83.3</u></b>	<b><u>63.8</u></b>
454.calculix	151	54.7	150	54.8	<b><u>150</u></b>	<b><u>54.8</u></b>	138	59.7	<b><u>138</u></b>	<b><u>59.7</u></b>	138	59.6
459.GemsFDTD	54.1	196	<b><u>53.4</u></b>	<b><u>199</u></b>	53.3	199	49.6	214	49.8	213	<b><u>49.6</u></b>	<b><u>214</u></b>
465.tonto	225	43.8	222	44.3	<b><u>222</u></b>	<b><u>44.3</u></b>	<b><u>179</u></b>	<b><u>55.0</u></b>	179	55.0	179	54.9
470.lbm	<b><u>23.5</u></b>	<b><u>585</u></b>	23.3	591	24.0	573	<b><u>23.5</u></b>	<b><u>585</u></b>	23.3	591	24.0	573
481.wrf	<b><u>109</u></b>	<b><u>103</u></b>	109	102	108	103	<b><u>109</u></b>	<b><u>103</u></b>	109	102	108	103
482.sphinx3	216	90.4	217	89.6	<b><u>217</u></b>	<b><u>89.7</u></b>	218	89.4	<b><u>217</u></b>	<b><u>89.7</u></b>	216	90.3

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:  
Hyper-threading = Disabled

## General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact,0,1"  
LD\_LIBRARY\_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"  
OMP\_NUM\_THREADS = "16"

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## General Notes (Continued)

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.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 -parallel -opt-prefetch -ansi-alias

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## Base Optimization Flags (Continued)

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -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: `-xAVX(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: `-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`

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## Peak Optimization Flags (Continued)

447.dealII: 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: basepeak = yes

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-

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

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.html>

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-revB.20130719.xml>



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