



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

SuperServer 2027GR-TRF  
(X9DRG-HF , Intel Xeon E5-2667 v2)

SPECfp<sup>®</sup>2006 = 112

SPECfp\_base2006 = 107

CPU2006 license: 001176

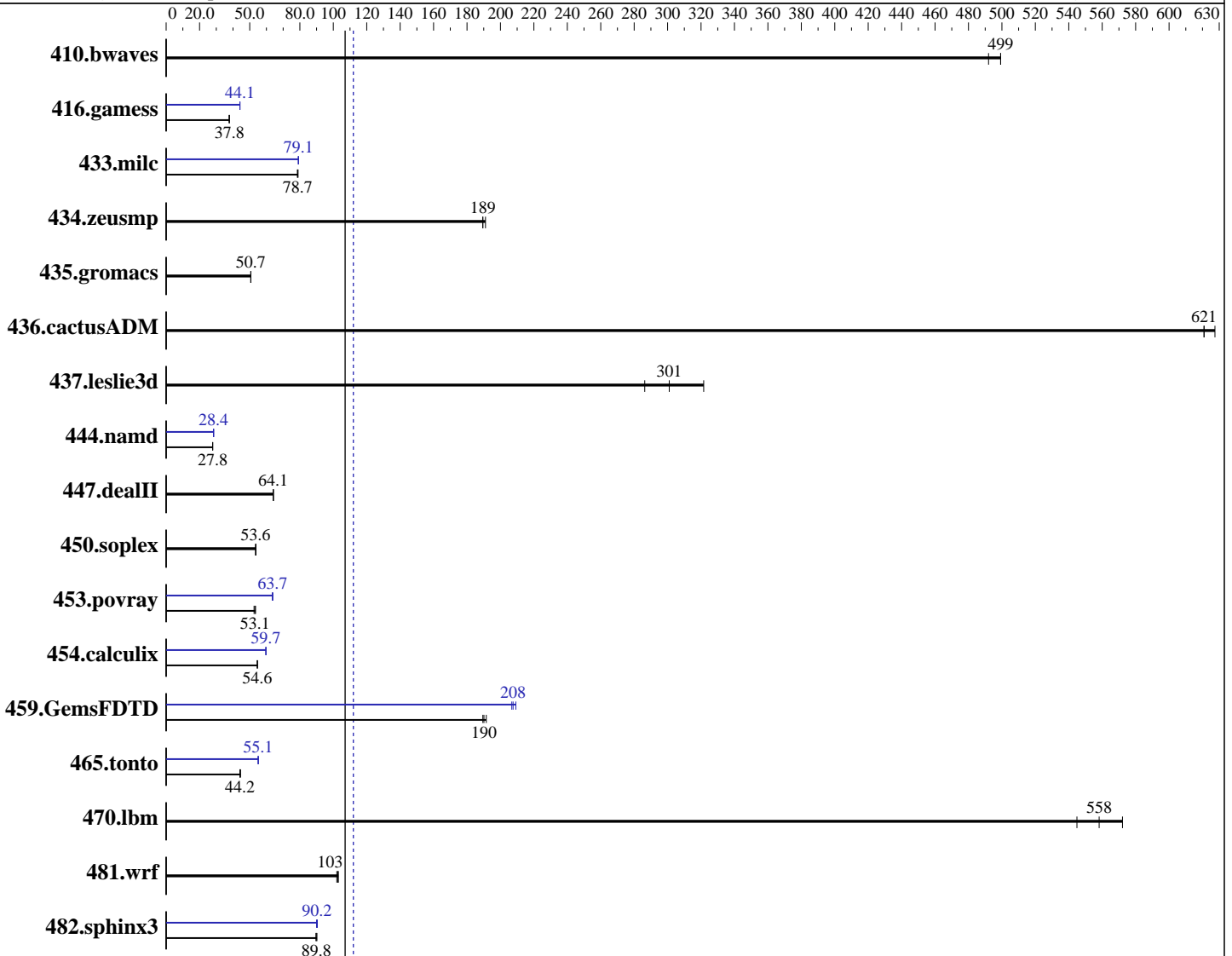
Test sponsor: Supermicro

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: 64 GB (8 x 8 GB 2Rx4 PC3-14900R-13, ECC)  
Disk Subsystem: 2 x 160 GB SATA III, RAID0, 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	27.2	499	27.6	492	<u>27.2</u>	<u>499</u>	27.2	499	27.6	492	<u>27.2</u>	<u>499</u>
416.gamess	518	37.8	519	37.7	<u>518</u>	<u>37.8</u>	443	44.2	<u>444</u>	<u>44.1</u>	444	44.1
433.milc	<u>117</u>	<u>78.7</u>	116	78.9	117	78.5	<u>116</u>	<u>79.1</u>	116	79.1	116	79.2
434.zeusmp	48.0	189	47.6	191	<u>48.0</u>	<u>189</u>	48.0	189	47.6	191	<u>48.0</u>	<u>189</u>
435.gromacs	<u>141</u>	<u>50.7</u>	141	50.7	141	50.7	<u>141</u>	<u>50.7</u>	141	50.7	141	50.7
436.cactusADM	19.2	621	19.0	627	<u>19.2</u>	<u>621</u>	19.2	621	19.0	627	<u>19.2</u>	<u>621</u>
437.leslie3d	<u>31.2</u>	<u>301</u>	32.8	286	29.2	322	<u>31.2</u>	<u>301</u>	32.8	286	29.2	322
444.namd	288	27.8	288	27.9	<u>288</u>	<u>27.8</u>	282	28.4	282	28.4	<u>282</u>	<u>28.4</u>
447.dealII	<u>178</u>	<u>64.1</u>	179	64.1	178	64.1	<u>178</u>	<u>64.1</u>	179	64.1	178	64.1
450.soplex	156	53.5	155	53.7	<u>156</u>	<u>53.6</u>	156	53.5	155	53.7	<u>156</u>	<u>53.6</u>
453.povray	99.5	53.5	<u>100</u>	<u>53.1</u>	101	52.6	83.4	63.8	<u>83.5</u>	<u>63.7</u>	83.8	63.5
454.calculix	<u>151</u>	<u>54.6</u>	151	54.5	151	54.6	138	59.7	<u>138</u>	<u>59.7</u>	138	59.7
459.GemsFDTD	55.4	192	56.0	189	<u>55.8</u>	<u>190</u>	<u>51.1</u>	<u>208</u>	51.3	207	50.7	209
465.tonto	221	44.5	223	44.1	<u>223</u>	<u>44.2</u>	<u>179</u>	<u>55.1</u>	179	55.0	178	55.1
470.lbm	25.2	545	<u>24.6</u>	<u>558</u>	24.0	572	25.2	545	<u>24.6</u>	<u>558</u>	24.0	572
481.wrf	109	102	<u>109</u>	<u>103</u>	108	103	109	102	<u>109</u>	<u>103</u>	108	103
482.sphinx3	217	89.6	216	90.2	<u>217</u>	<u>89.8</u>	217	90.0	215	90.5	<u>216</u>	<u>90.2</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 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/cpu/libs/32:/home/cpu/libs/64:/home/cpu/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.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:  
-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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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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