



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

SPECfp<sup>®</sup>2006 = **71.5**

SuperServer 1017C-TF (X9SCL-F, Intel E3-1280V2)

SPECfp\_base2006 = **69.5**

CPU2006 license: 001176

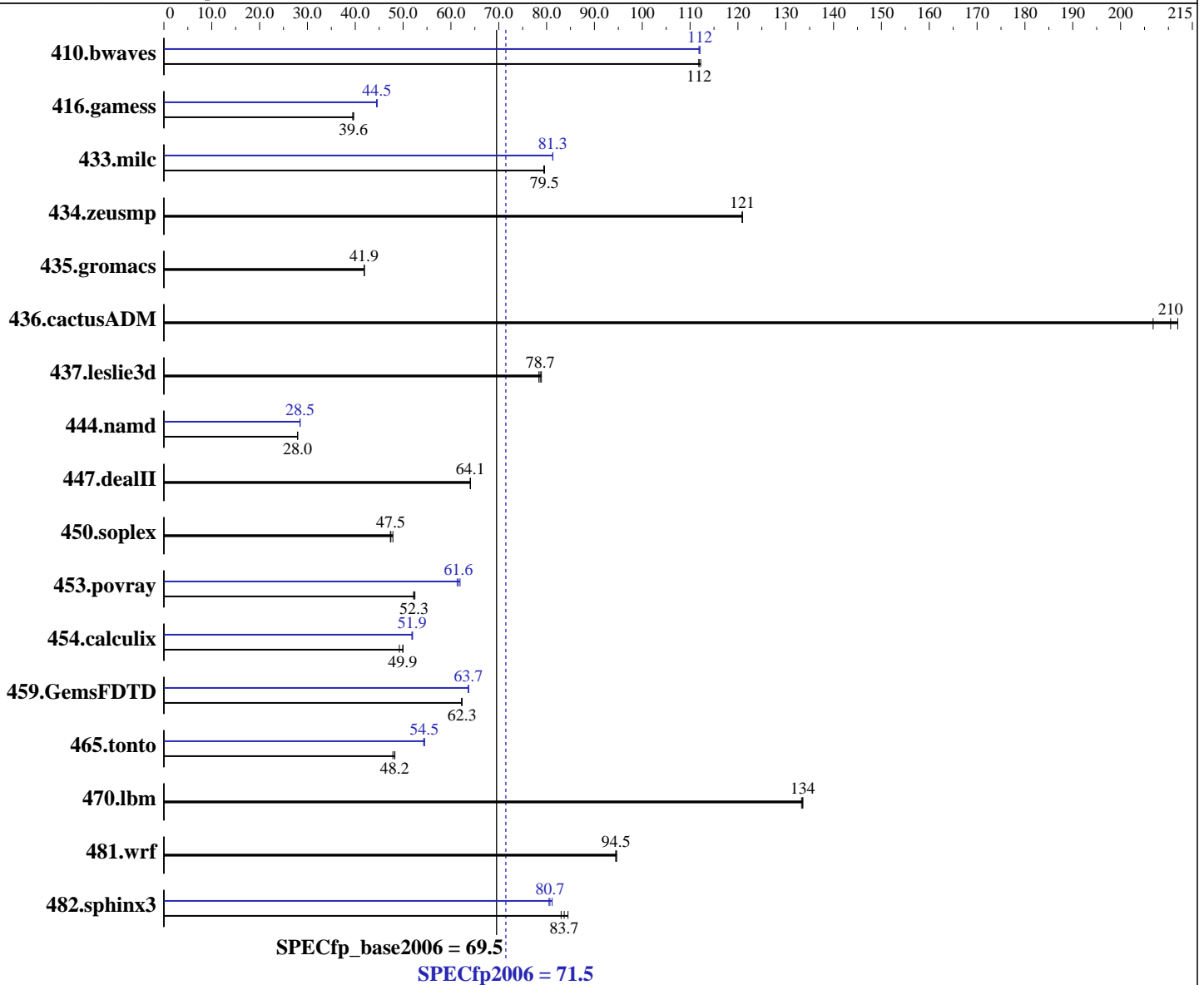
Test date: May-2012

Test sponsor: Supermicro

Hardware Availability: May-2012

Tested by: Supermicro

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E3-1280 v2  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 3600  
 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 6.2 (Santiago), Kernel 2.6.32-220.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: 8 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3-12800E-11, ECC)  
 Disk Subsystem: 1 x 500 GB 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	121	112	<b><u>121</u></b>	<b><u>112</u></b>	122	112	<b><u>121</u></b>	<b><u>112</u></b>	121	112	121	112
416.gamess	496	39.5	494	39.6	<b><u>494</u></b>	<b><u>39.6</u></b>	<b><u>440</u></b>	<b><u>44.5</u></b>	439	44.6	440	44.5
433.milc	115	79.6	116	79.4	<b><u>115</u></b>	<b><u>79.5</u></b>	<b><u>113</u></b>	<b><u>81.3</u></b>	113	81.3	113	81.3
434.zeusmp	75.3	121	75.3	121	<b><u>75.3</u></b>	<b><u>121</u></b>	75.3	121	75.3	121	<b><u>75.3</u></b>	<b><u>121</u></b>
435.gromacs	170	41.9	<b><u>171</u></b>	<b><u>41.9</u></b>	171	41.9	170	41.9	<b><u>171</u></b>	<b><u>41.9</u></b>	171	41.9
436.cactusADM	56.4	212	<b><u>56.8</u></b>	<b><u>210</u></b>	57.8	207	56.4	212	<b><u>56.8</u></b>	<b><u>210</u></b>	57.8	207
437.leslie3d	<b><u>120</u></b>	<b><u>78.7</u></b>	119	78.9	120	78.4	<b><u>120</u></b>	<b><u>78.7</u></b>	119	78.9	120	78.4
444.namd	287	28.0	<b><u>287</u></b>	<b><u>28.0</u></b>	287	27.9	<b><u>282</u></b>	<b><u>28.5</u></b>	282	28.4	282	28.5
447.dealII	<b><u>179</u></b>	<b><u>64.1</u></b>	179	64.1	179	64.0	<b><u>179</u></b>	<b><u>64.1</u></b>	179	64.1	179	64.0
450.soplex	<b><u>176</u></b>	<b><u>47.5</u></b>	174	47.9	176	47.3	<b><u>176</u></b>	<b><u>47.5</u></b>	174	47.9	176	47.3
453.povray	<b><u>102</u></b>	<b><u>52.3</u></b>	101	52.5	102	52.2	85.9	61.9	<b><u>86.4</u></b>	<b><u>61.6</u></b>	86.8	61.3
454.calculix	165	50.0	168	49.2	<b><u>165</u></b>	<b><u>49.9</u></b>	159	52.0	159	51.9	<b><u>159</u></b>	<b><u>51.9</u></b>
459.GemsFDTD	170	62.3	<b><u>170</u></b>	<b><u>62.3</u></b>	170	62.2	167	63.7	167	63.6	<b><u>167</u></b>	<b><u>63.7</u></b>
465.tonto	206	47.9	<b><u>204</u></b>	<b><u>48.2</u></b>	204	48.3	<b><u>181</u></b>	<b><u>54.5</u></b>	181	54.5	181	54.3
470.lbm	103	133	103	134	<b><u>103</u></b>	<b><u>134</u></b>	103	133	103	134	<b><u>103</u></b>	<b><u>134</u></b>
481.wrf	<b><u>118</u></b>	<b><u>94.5</u></b>	118	94.5	118	94.6	<b><u>118</u></b>	<b><u>94.5</u></b>	118	94.5	118	94.6
482.sphinx3	231	84.5	235	83.0	<b><u>233</u></b>	<b><u>83.7</u></b>	240	81.2	242	80.5	<b><u>242</u></b>	<b><u>80.7</u></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 = "/home/cpu2006/libs/32:/home/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.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 -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  
-ansi-alias



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**Hardware Availability:** May-2012

**Tested by:** Supermicro

**Software Availability:** Dec-2011

## 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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