



# SPEC® CFP2006 Result

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## Supermicro

SuperServer 5018D-MTF (X10SLM-F, Intel Xeon E3-1240 v3, 3.40 GHz)

SPECfp®2006 = 73.3

SPECfp\_base2006 = 71.9

CPU2006 license: 001176

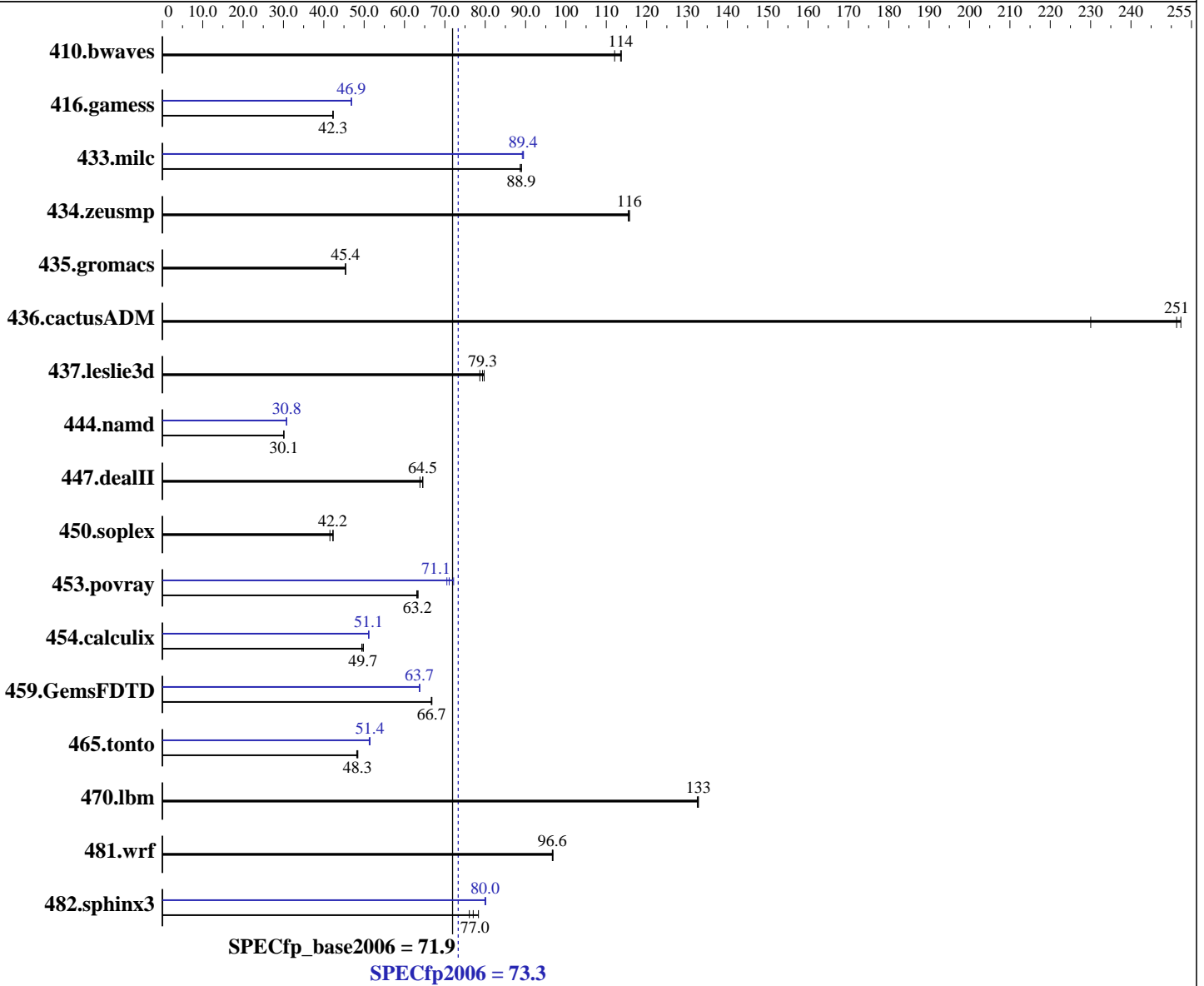
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2013

Hardware Availability: Jun-2013

Software Availability: May-2013



### Hardware

CPU Name: Intel Xeon E3-1240 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.80 GHz  
 CPU MHz: 3400  
 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 6.4, Kernel 2.6.32-358.el6.x86\_64  
 Compiler: C/C++: Version 13.1.1.163 of Intel C++ Studio XE for Linux;  
 Fortran: Version 13.1.1.163 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: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 32 GB (4 x 8 GB 2Rx4 PC3-12800E-11, ECC)  
Disk Subsystem: 1 x 500 GB SATA II, 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	<b><u>120</u></b>	<b><u>114</u></b>	121	112	119	114	<b><u>120</u></b>	<b><u>114</u></b>	121	112	119	114
416.gamess	463	42.3	464	42.2	<b><u>463</u></b>	<b><u>42.3</u></b>	<b><u>418</u></b>	<b><u>46.9</u></b>	418	46.9	418	46.8
433.milc	104	88.7	103	89.0	<b><u>103</u></b>	<b><u>88.9</u></b>	103	89.2	103	89.5	<b><u>103</u></b>	<b><u>89.4</u></b>
434.zeusmp	78.8	115	<b><u>78.6</u></b>	<b><u>116</u></b>	78.6	116	78.8	115	<b><u>78.6</u></b>	<b><u>116</u></b>	78.6	116
435.gromacs	157	45.4	<b><u>157</u></b>	<b><u>45.4</u></b>	157	45.4	157	45.4	<b><u>157</u></b>	<b><u>45.4</u></b>	157	45.4
436.cactusADM	<b><u>47.6</u></b>	<b><u>251</u></b>	47.4	252	52.0	230	<b><u>47.6</u></b>	<b><u>251</u></b>	47.4	252	52.0	230
437.leslie3d	118	79.7	119	78.7	<b><u>118</u></b>	<b><u>79.3</u></b>	118	79.7	119	78.7	<b><u>118</u></b>	<b><u>79.3</u></b>
444.namd	267	30.1	266	30.1	<b><u>266</u></b>	<b><u>30.1</u></b>	261	30.8	<b><u>261</u></b>	<b><u>30.8</u></b>	261	30.8
447.dealII	179	63.8	<b><u>177</u></b>	<b><u>64.5</u></b>	177	64.6	179	63.8	<b><u>177</u></b>	<b><u>64.5</u></b>	177	64.6
450.soplex	<b><u>198</u></b>	<b><u>42.2</u></b>	197	42.3	201	41.5	<b><u>198</u></b>	<b><u>42.2</u></b>	197	42.3	201	41.5
453.povray	<b><u>84.2</u></b>	<b><u>63.2</u></b>	83.9	63.4	84.4	63.0	<b><u>74.9</u></b>	<b><u>71.1</u></b>	75.5	70.5	73.7	72.2
454.calculix	167	49.4	<b><u>166</u></b>	<b><u>49.7</u></b>	166	49.8	<b><u>161</u></b>	<b><u>51.1</u></b>	161	51.2	161	51.1
459.GemsFDTD	<b><u>159</u></b>	<b><u>66.7</u></b>	159	66.6	159	66.8	166	63.8	167	63.7	<b><u>167</u></b>	<b><u>63.7</u></b>
465.tonto	204	48.2	203	48.4	<b><u>204</u></b>	<b><u>48.3</u></b>	191	51.4	<b><u>191</u></b>	<b><u>51.4</u></b>	192	51.3
470.lbm	103	133	104	133	<b><u>103</u></b>	<b><u>133</u></b>	103	133	104	133	<b><u>103</u></b>	<b><u>133</u></b>
481.wrf	115	96.8	116	96.6	<b><u>116</u></b>	<b><u>96.6</u></b>	115	96.8	116	96.6	<b><u>116</u></b>	<b><u>96.6</u></b>
482.sphinx3	<b><u>253</u></b>	<b><u>77.0</u></b>	256	76.1	249	78.3	244	79.9	<b><u>244</u></b>	<b><u>80.0</u></b>	243	80.1

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:

LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"  
OMP\_NUM\_THREADS = "4"

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

runspec command invoked through numactl i.e.:

numactl --interleave=all runspec <etc>



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**CPU2006 license:** 001176  
**Test sponsor:** Supermicro  
**Tested by:** Supermicro

**Test date:** Jun-2013  
**Hardware Availability:** Jun-2013  
**Software Availability:** May-2013

## 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:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

C++ benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:  
-xCORE-AVX2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
-xCORE-AVX2 -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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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:

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## Peak Optimization Flags (Continued)

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2(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: -xCORE-AVX2 -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/Supermicro-Platform-Settings-V1.2-revB.20130719.html>

<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.html>

You can also download the XML flags sources by saving the following links:

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

<http://www.spec.org/cpu2006/flags/Intel-ic13-official-linux64.20130702.xml>

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

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