



# SPEC® CFP2006 Result

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## Supermicro

SuperWorkstation 5038A-iL (X10SAE, Intel Core i5-4430, 3.00 GHz)

SPECfp®2006 = 65.9

SPECfp\_base2006 = 64.5

CPU2006 license: 001176

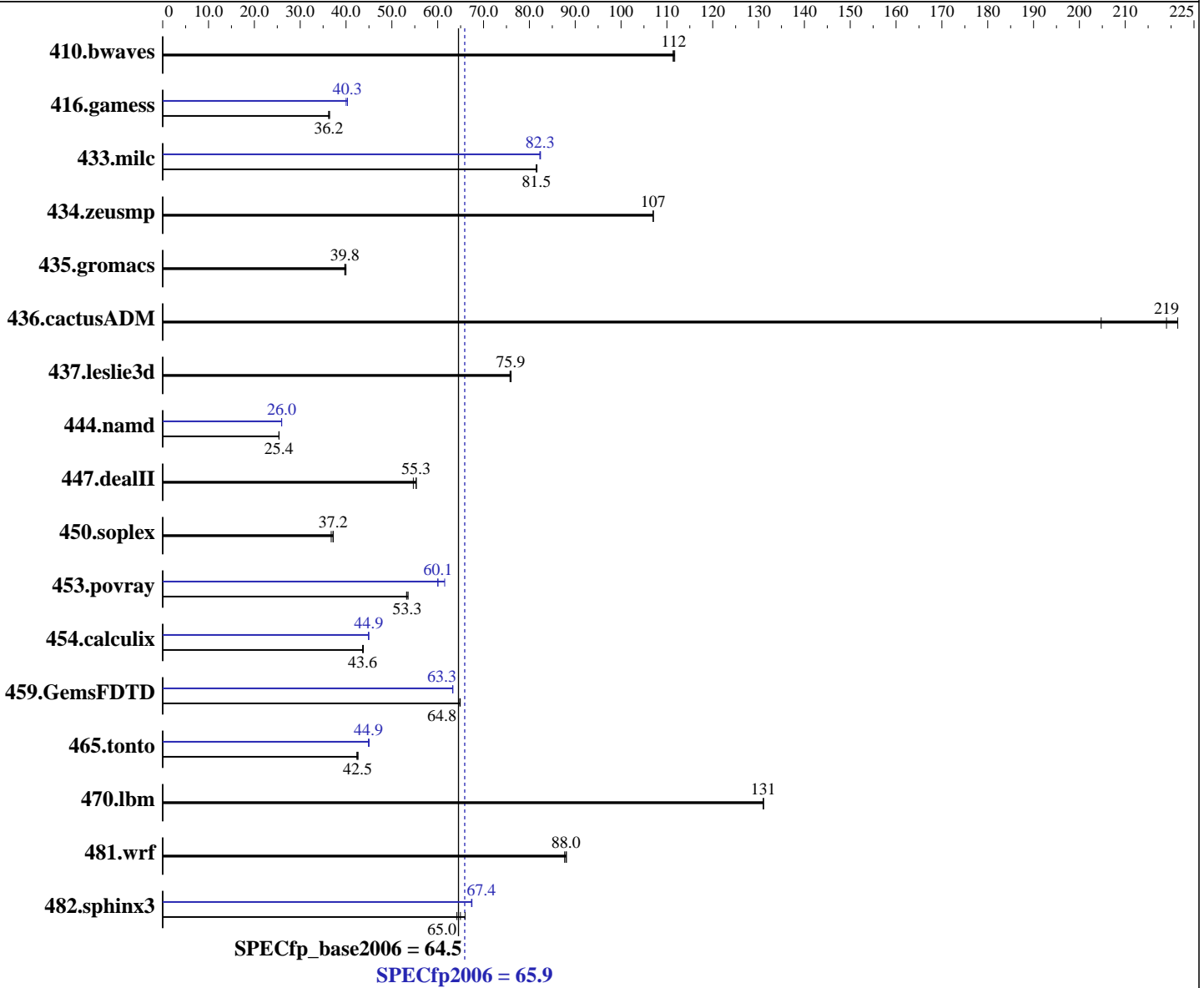
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Jun-2013

Hardware Availability: Jun-2013

Software Availability: May-2013



SPECfp\_base2006 = 64.5  
SPECfp2006 = 65.9

### Hardware

CPU Name: Intel Core i5-4430  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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 6.4, 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: 6 MB I+D on chip per chip  
Other Cache: None  
Memory: 16 GB (4 x 4 GB 2Rx4 PC3-12800U-11)  
Disk Subsystem: 1 x 1000 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	<u>122</u>	<u>112</u>	122	112	122	111	<u>122</u>	<u>112</u>	122	112	122	111
416.gamess	540	36.2	538	36.4	<u>540</u>	<u>36.2</u>	489	40.0	486	40.3	<u>486</u>	<u>40.3</u>
433.milc	112	81.7	<u>113</u>	<u>81.5</u>	113	81.5	112	82.3	<u>111</u>	<u>82.3</u>	111	82.4
434.zeusmp	<u>85.0</u>	<u>107</u>	85.0	107	85.0	107	<u>85.0</u>	<u>107</u>	85.0	107	85.0	107
435.gromacs	179	40.0	<u>180</u>	<u>39.8</u>	180	39.7	179	40.0	<u>180</u>	<u>39.8</u>	180	39.7
436.cactusADM	54.0	221	58.4	205	<u>54.6</u>	<u>219</u>	54.0	221	58.4	205	<u>54.6</u>	<u>219</u>
437.leslie3d	<u>124</u>	<u>75.9</u>	124	76.0	124	75.8	<u>124</u>	<u>75.9</u>	124	76.0	124	75.8
444.namd	316	25.4	<u>316</u>	<u>25.4</u>	316	25.4	309	26.0	<u>309</u>	<u>26.0</u>	309	25.9
447.dealII	209	54.7	207	55.3	<u>207</u>	<u>55.3</u>	209	54.7	207	55.3	<u>207</u>	<u>55.3</u>
450.soplex	224	37.2	<u>224</u>	<u>37.2</u>	227	36.8	224	37.2	<u>224</u>	<u>37.2</u>	227	36.8
453.povray	<u>99.8</u>	<u>53.3</u>	100	53.2	99.3	53.5	88.7	60.0	<u>88.6</u>	<u>60.1</u>	86.5	61.5
454.calculix	<u>189</u>	<u>43.6</u>	189	43.6	188	43.8	184	44.9	<u>184</u>	<u>44.9</u>	183	45.0
459.GemsFDTD	164	64.8	163	64.9	<u>164</u>	<u>64.8</u>	168	63.3	<u>168</u>	<u>63.3</u>	168	63.3
465.tonto	232	42.4	<u>231</u>	<u>42.5</u>	231	42.6	219	45.0	219	44.9	<u>219</u>	<u>44.9</u>
470.lbm	105	131	105	131	<u>105</u>	<u>131</u>	105	131	105	131	<u>105</u>	<u>131</u>
481.wrf	127	87.7	<u>127</u>	<u>88.0</u>	127	88.1	127	87.7	<u>127</u>	<u>88.0</u>	127	88.1
482.sphinx3	295	66.0	304	64.2	<u>300</u>	<u>65.0</u>	289	67.4	<u>289</u>	<u>67.4</u>	289	67.5

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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## 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  
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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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