



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

### SPECfp<sup>®</sup>\_rate2006 = 118

### SuperServer 1017C-TF (X9SCL-F, Intel E3-1230)

### SPECfp\_rate\_base2006 = 115

CPU2006 license: 001176

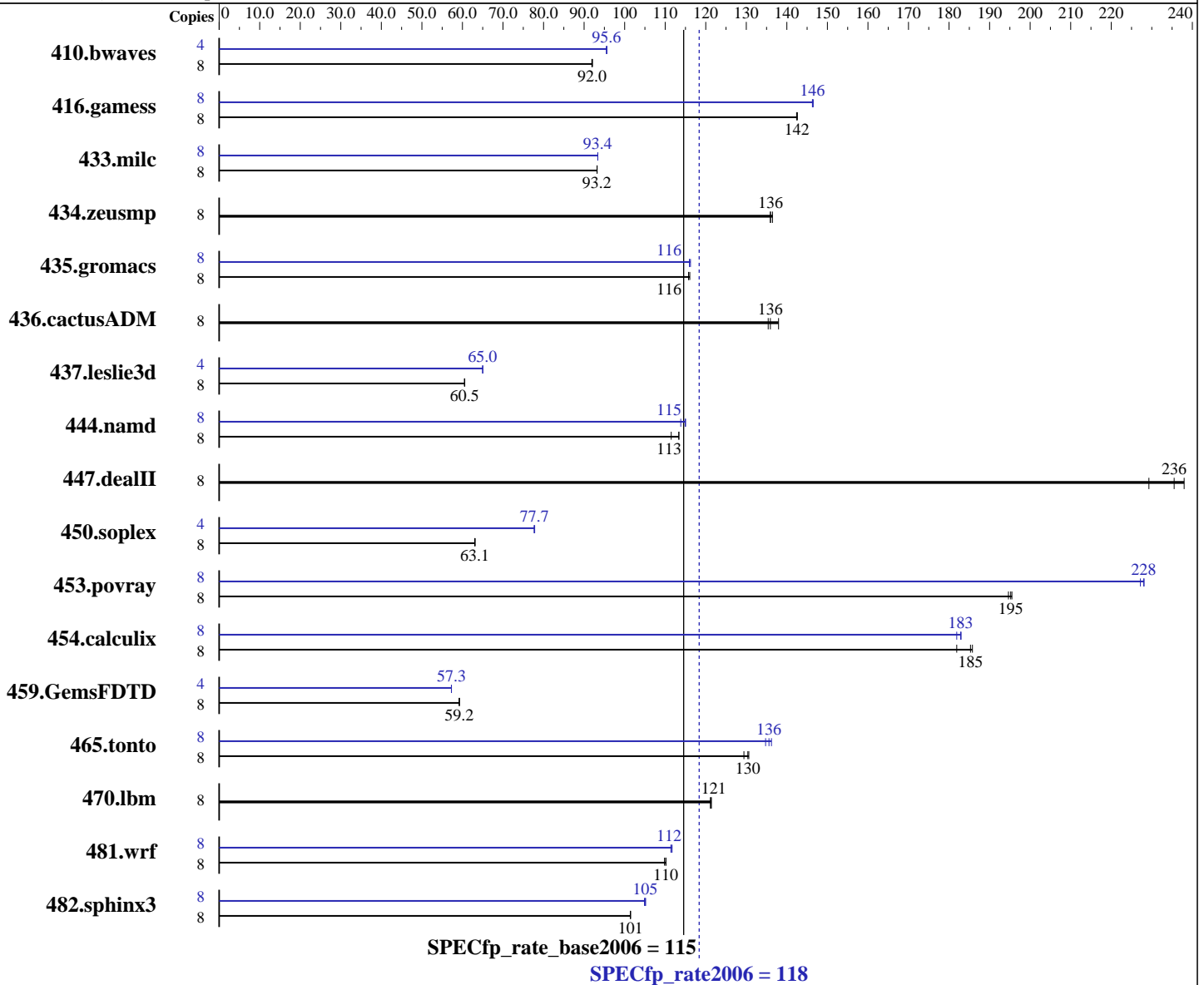
Test date: May-2012

Test sponsor: Supermicro

Hardware Availability: Apr-2011

Tested by: Supermicro

Software Availability: Oct-2011



#### Hardware

CPU Name: Intel Xeon E3-1230  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3200  
 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 6.1, Kernel 2.6.32-131.0.15.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: No  
 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: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)  
Disk Subsystem: 1 x 500 GB SATA II, 7200 RPM  
Other Hardware: None

Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

| Benchmark     | Base   |                    |                   |                    |                    |                    |                    | Peak   |                   |                    |                    |                    |                    |                    |
|---------------|--------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|               | Copies | Seconds            | Ratio             | Seconds            | Ratio              | Seconds            | Ratio              | Copies | Seconds           | Ratio              | Seconds            | Ratio              | Seconds            | Ratio              |
| 410.bwaves    | 8      | 1183               | 91.9              | 1181               | 92.1               | <b><u>1182</u></b> | <b><u>92.0</u></b> | 4      | 568               | 95.6               | <b><u>569</u></b>  | <b><u>95.6</u></b> | 569                | 95.5               |
| 416.gamess    | 8      | 1099               | 143               | <b><u>1099</u></b> | <b><u>142</u></b>  | 1100               | 142                | 8      | 1071              | 146                | <b><u>1070</u></b> | <b><u>146</u></b>  | 1069               | 147                |
| 433.milc      | 8      | 788                | 93.2              | 788                | 93.2               | <b><u>788</u></b>  | <b><u>93.2</u></b> | 8      | 786               | 93.4               | <b><u>786</u></b>  | <b><u>93.4</u></b> | 786                | 93.4               |
| 434.zeusmp    | 8      | 536                | 136               | <b><u>535</u></b>  | <b><u>136</u></b>  | 534                | 136                | 8      | 536               | 136                | <b><u>535</u></b>  | <b><u>136</u></b>  | 534                | 136                |
| 435.gromacs   | 8      | 492                | 116               | 493                | 116                | <b><u>493</u></b>  | <b><u>116</u></b>  | 8      | 493               | 116                | 491                | 116                | <b><u>492</u></b>  | <b><u>116</u></b>  |
| 436.cactusADM | 8      | 693                | 138               | <b><u>703</u></b>  | <b><u>136</u></b>  | 706                | 135                | 8      | 693               | 138                | <b><u>703</u></b>  | <b><u>136</u></b>  | 706                | 135                |
| 437.leslie3d  | 8      | 1243               | 60.5              | 1241               | 60.6               | <b><u>1242</u></b> | <b><u>60.5</u></b> | 4      | <b><u>578</u></b> | <b><u>65.0</u></b> | 579                | 65.0               | 578                | 65.0               |
| 444.namd      | 8      | <b><u>566</u></b>  | <b><u>113</u></b> | 566                | 113                | 576                | 111                | 8      | 564               | 114                | 558                | 115                | <b><u>558</u></b>  | <b><u>115</u></b>  |
| 447.dealII    | 8      | <b><u>389</u></b>  | <b><u>236</u></b> | 385                | 238                | 399                | 229                | 8      | <b><u>389</u></b> | <b><u>236</u></b>  | 385                | 238                | 399                | 229                |
| 450.soplex    | 8      | 1059               | 63.0              | 1057               | 63.1               | <b><u>1058</u></b> | <b><u>63.1</u></b> | 4      | 429               | 77.8               | 429                | 77.7               | <b><u>429</u></b>  | <b><u>77.7</u></b> |
| 453.povray    | 8      | 219                | 195               | 218                | 195                | <b><u>218</u></b>  | <b><u>195</u></b>  | 8      | 187               | 227                | 187                | 228                | <b><u>187</u></b>  | <b><u>228</u></b>  |
| 454.calculix  | 8      | 355                | 186               | 363                | 182                | <b><u>356</u></b>  | <b><u>185</u></b>  | 8      | 361               | 183                | 363                | 182                | <b><u>361</u></b>  | <b><u>183</u></b>  |
| 459.GemsFDTD  | 8      | 1432               | 59.3              | <b><u>1433</u></b> | <b><u>59.2</u></b> | 1434               | 59.2               | 4      | 741               | 57.3               | <b><u>741</u></b>  | <b><u>57.3</u></b> | 741                | 57.3               |
| 465.tonto     | 8      | <b><u>604</u></b>  | <b><u>130</u></b> | 608                | 129                | 603                | 131                | 8      | <b><u>581</u></b> | <b><u>136</u></b>  | 584                | 135                | 578                | 136                |
| 470.lbm       | 8      | 905                | 121               | <b><u>907</u></b>  | <b><u>121</u></b>  | 907                | 121                | 8      | 905               | 121                | <b><u>907</u></b>  | <b><u>121</u></b>  | 907                | 121                |
| 481.wrf       | 8      | <b><u>811</u></b>  | <b><u>110</u></b> | 814                | 110                | 811                | 110                | 8      | 802               | 111                | <b><u>801</u></b>  | <b><u>112</u></b>  | 800                | 112                |
| 482.sphinx3   | 8      | <b><u>1537</u></b> | <b><u>101</u></b> | 1537               | 101                | 1537               | 101                | 8      | 1482              | 105                | 1487               | 105                | <b><u>1484</u></b> | <b><u>105</u></b>  |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Transparent Huge Pages disabled with:  
echo never > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled



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

Test date: May-2012  
Hardware Availability: Apr-2011  
Software Availability: Oct-2011

### General Notes

Environment variables set by runspec before the start of the run:  
LD\_LIBRARY\_PATH = "/home/usr/cpu2006/libs/32:/home/usr/cpu2006/libs/64"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5

### 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.deallI: -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 -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

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Software Availability: Oct-2011

## Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
465.tonto: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX



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## 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  
-opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

### 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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static

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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

### Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-static -auto-ilp32 -opt-mem-layout-trans=3

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## Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-mem-layout-trans=3

481.wrf: Same as 454.calculix

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.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-linux64.20111122.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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