



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

SuperServer 6028TP-HTR  
(X10DRT-P, Intel Xeon E5-2603 v3)

SPECfp<sup>®</sup>2006 = **58.5**

SPECfp\_base2006 = **56.9**

CPU2006 license: 001176

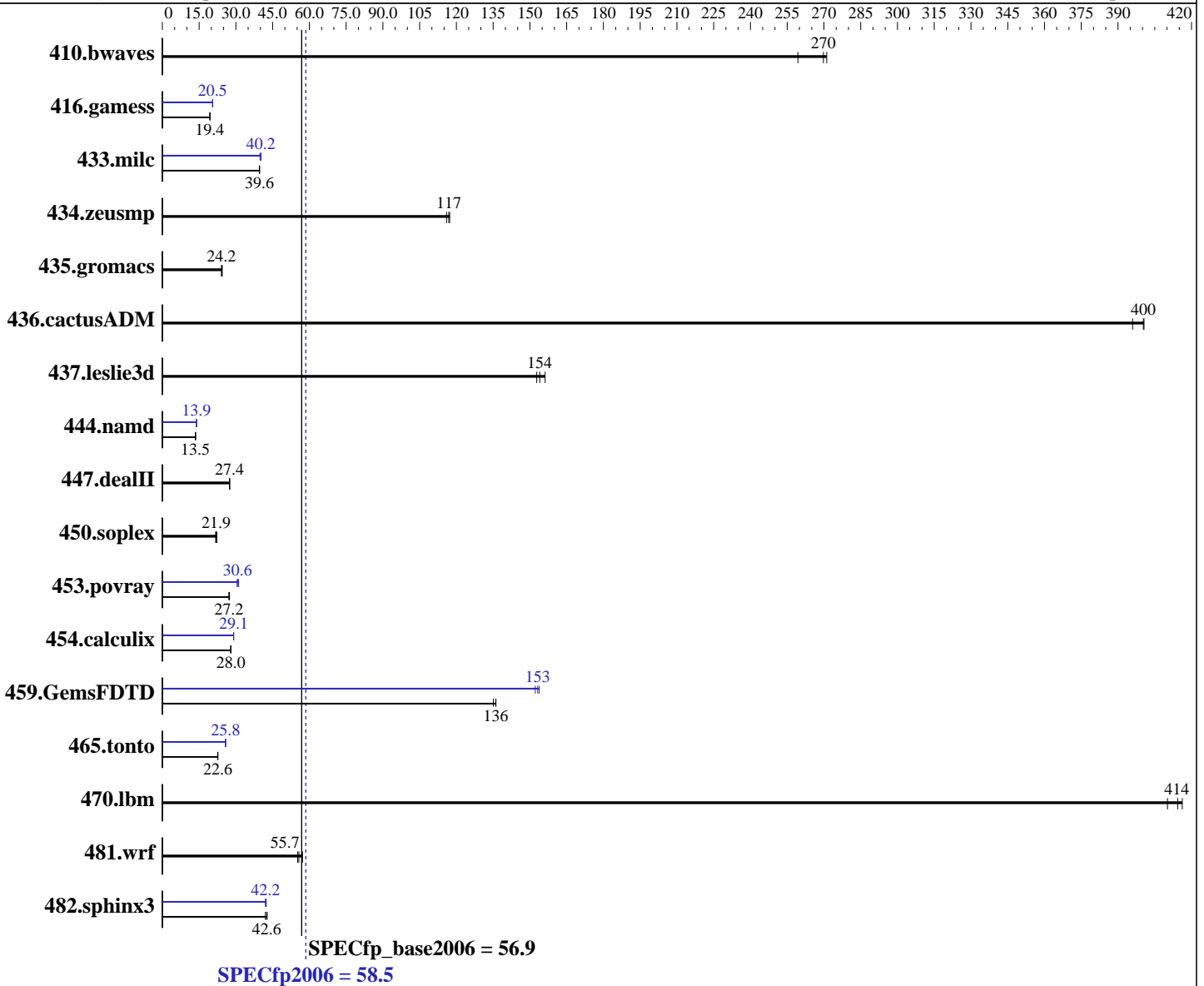
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Nov-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2603 v3  
 CPU Characteristics:  
 CPU MHz: 1600  
 FPU: Integrated  
 CPU(s) enabled: 12 cores, 2 chips, 6 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: CentOS Linux Server release 7.0, Kernel 3.10.0-123.9.2.el7.x86\_64  
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux;  
 Fortran: Version 15.0.0.090 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: 15 MB I+D on chip per chip  
Other Cache: None  
Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)  
Disk Subsystem: 1 x 1000 GB SATA III, 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	52.4	259	<b>50.4</b>	<b>270</b>	50.1	271	52.4	259	<b>50.4</b>	<b>270</b>	50.1	271
416.gamess	1009	19.4	<b>1009</b>	<b>19.4</b>	1006	19.5	<b>954</b>	<b>20.5</b>	954	20.5	957	20.5
433.milc	<b>232</b>	<b>39.6</b>	231	39.7	232	39.6	230	39.8	228	40.3	<b>228</b>	<b>40.2</b>
434.zeusmp	77.6	117	78.5	116	<b>77.8</b>	<b>117</b>	77.6	117	78.5	116	<b>77.8</b>	<b>117</b>
435.gromacs	292	24.4	295	24.2	<b>295</b>	<b>24.2</b>	292	24.4	295	24.2	<b>295</b>	<b>24.2</b>
436.cactusADM	<b>29.8</b>	<b>400</b>	29.8	401	30.2	396	<b>29.8</b>	<b>400</b>	29.8	401	30.2	396
437.leslie3d	61.5	153	<b>61.0</b>	<b>154</b>	60.2	156	61.5	153	<b>61.0</b>	<b>154</b>	60.2	156
444.namd	<b>593</b>	<b>13.5</b>	593	13.5	593	13.5	577	13.9	<b>576</b>	<b>13.9</b>	576	13.9
447.dealII	<b>417</b>	<b>27.4</b>	417	27.5	417	27.4	<b>417</b>	<b>27.4</b>	417	27.5	417	27.4
450.soplex	<b>380</b>	<b>21.9</b>	375	22.2	383	21.8	<b>380</b>	<b>21.9</b>	375	22.2	383	21.8
453.povray	196	27.2	194	27.4	<b>196</b>	<b>27.2</b>	174	30.6	171	31.1	<b>174</b>	<b>30.6</b>
454.calculix	<b>295</b>	<b>28.0</b>	296	27.9	295	28.0	284	29.1	<b>284</b>	<b>29.1</b>	283	29.1
459.GemsFDTD	78.5	135	77.9	136	<b>78.0</b>	<b>136</b>	69.7	152	69.0	154	<b>69.3</b>	<b>153</b>
465.tonto	434	22.7	436	22.6	<b>435</b>	<b>22.6</b>	<b>381</b>	<b>25.8</b>	382	25.8	381	25.8
470.lbm	33.5	410	33.0	416	<b>33.2</b>	<b>414</b>	33.5	410	33.0	416	<b>33.2</b>	<b>414</b>
481.wrf	202	55.2	<b>200</b>	<b>55.7</b>	195	57.2	202	55.2	<b>200</b>	<b>55.7</b>	195	57.2
482.sphinx3	456	42.7	464	42.0	<b>458</b>	<b>42.6</b>	463	42.1	<b>462</b>	<b>42.2</b>	460	42.4

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 Settings:  
Early Snoop = Disable

## General Notes

Environment variables set by runspec before the start of the run:

KMP\_AFFINITY = "granularity=fine,compact,0,1"

LD\_LIBRARY\_PATH = "/home/SPEC2K6/SPEC2006-V12/libs/32:/home/SPEC2K6/SPEC2006-V12/libs/64:/home/SPEC2K6/SPEC2006-V12/sh"

OMP\_NUM\_THREADS = "12"

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### General Notes (Continued)

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/transparent\_hugepage/enabled

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

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xCORE-AVX2 -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: -xCORE-AVX2(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: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

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## Peak Optimization Flags (Continued)

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.dealII: 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:

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-

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/Intel-ic15.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revE.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml>

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

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