



# SPEC® CFP2006 Result

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## Supermicro

SuperServer 6028TP-HTR  
(X10DRT-P, Intel Xeon E5-2690 v3)

**SPECfp®2006 = 118**

**SPECfp\_base2006 = 113**

CPU2006 license: 001176

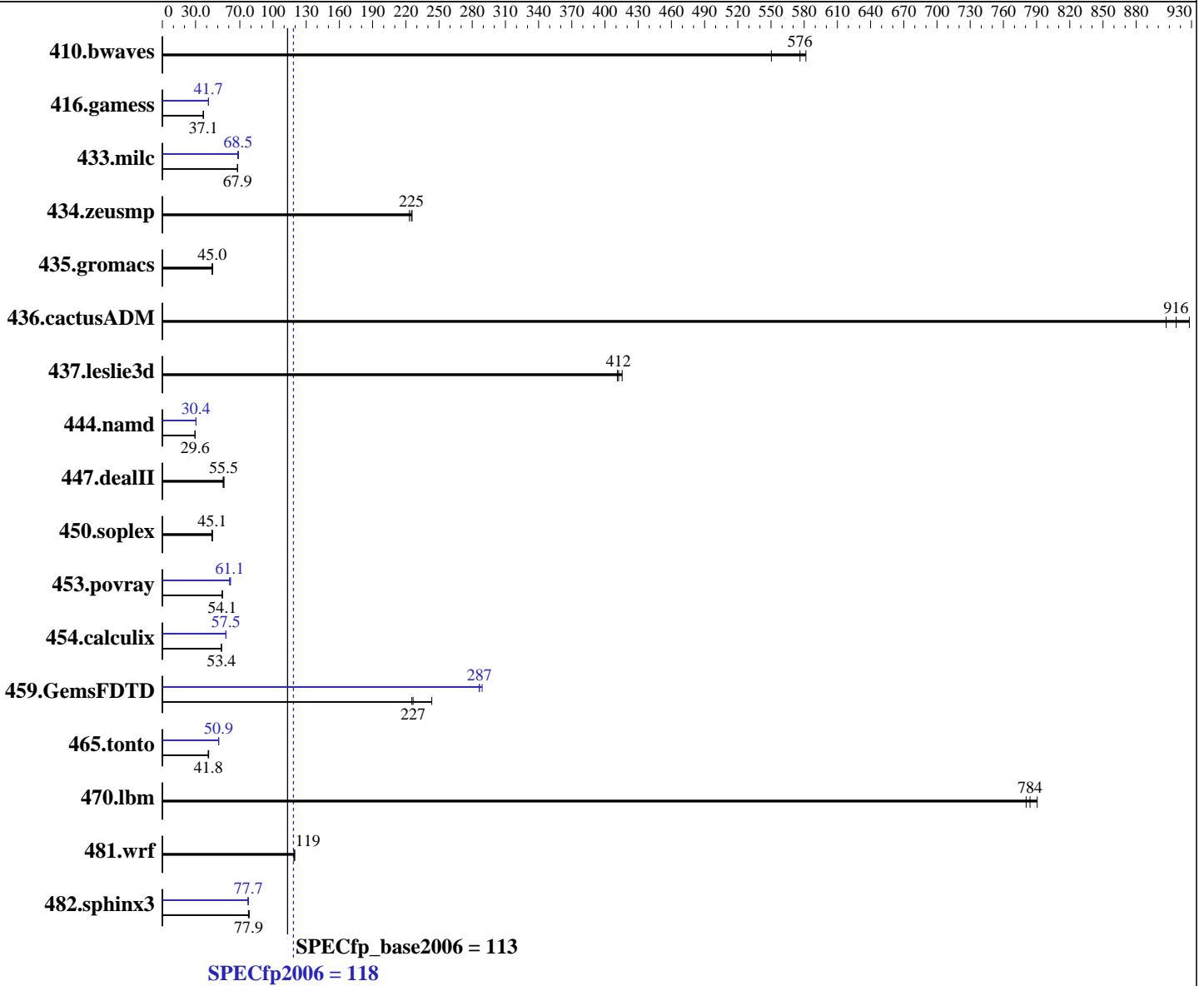
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2690 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 24 cores, 2 chips, 12 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 release 7.0,  
Kernel 3.10.0-123.8.1.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: 30 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 2000 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	24.7	550	<b><u>23.6</u></b>	<b><u>576</u></b>	23.4	582	24.7	550	<b><u>23.6</u></b>	<b><u>576</u></b>	23.4	582
416.gamess	531	36.8	<b><u>528</u></b>	<b><u>37.1</u></b>	526	37.2	471	41.6	469	41.8	<b><u>470</u></b>	<b><u>41.7</u></b>
433.milc	<b><u>135</u></b>	<b><u>67.9</u></b>	135	68.1	135	67.8	<b><u>134</u></b>	<b><u>68.5</u></b>	135	68.1	133	68.9
434.zeusmp	40.3	226	40.8	223	<b><u>40.4</u></b>	<b><u>225</u></b>	40.3	226	40.8	223	<b><u>40.4</u></b>	<b><u>225</u></b>
435.gromacs	<b><u>159</u></b>	<b><u>45.0</u></b>	157	45.5	159	45.0	<b><u>159</u></b>	<b><u>45.0</u></b>	157	45.5	159	45.0
436.cactusADM	<b><u>13.0</u></b>	<b><u>916</u></b>	12.9	928	13.2	907	<b><u>13.0</u></b>	<b><u>916</u></b>	12.9	928	13.2	907
437.leslie3d	22.6	415	<b><u>22.8</u></b>	<b><u>412</u></b>	22.9	411	22.6	415	<b><u>22.8</u></b>	<b><u>412</u></b>	22.9	411
444.namd	<b><u>271</u></b>	<b><u>29.6</u></b>	271	29.5	271	29.6	<b><u>264</u></b>	<b><u>30.4</u></b>	263	30.4	264	30.4
447.dealII	209	54.9	205	55.7	<b><u>206</u></b>	<b><u>55.5</u></b>	209	54.9	205	55.7	<b><u>206</u></b>	<b><u>55.5</u></b>
450.soplex	187	44.7	184	45.3	<b><u>185</u></b>	<b><u>45.1</u></b>	187	44.7	184	45.3	<b><u>185</u></b>	<b><u>45.1</u></b>
453.povray	97.9	54.3	<b><u>98.3</u></b>	<b><u>54.1</u></b>	98.5	54.0	<b><u>87.1</u></b>	<b><u>61.1</u></b>	86.3	61.7	87.5	60.8
454.calculix	<b><u>155</u></b>	<b><u>53.4</u></b>	154	53.4	155	53.3	<b><u>144</u></b>	<b><u>57.5</u></b>	144	57.5	144	57.5
459.GemsFDTD	43.6	243	<b><u>46.8</u></b>	<b><u>227</u></b>	47.1	225	<b><u>37.0</u></b>	<b><u>287</u></b>	36.7	289	37.0	286
465.tonto	235	41.9	<b><u>236</u></b>	<b><u>41.8</u></b>	238	41.3	<b><u>193</u></b>	<b><u>50.9</u></b>	194	50.8	193	50.9
470.lbm	17.4	791	<b><u>17.5</u></b>	<b><u>784</u></b>	17.6	781	17.4	791	<b><u>17.5</u></b>	<b><u>784</u></b>	17.6	781
481.wrf	94.0	119	<b><u>93.7</u></b>	<b><u>119</u></b>	93.3	120	94.0	119	<b><u>93.7</u></b>	<b><u>119</u></b>	93.3	120
482.sphinx3	248	78.5	251	77.8	<b><u>250</u></b>	<b><u>77.9</u></b>	251	77.7	<b><u>251</u></b>	<b><u>77.7</u></b>	252	77.3

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:  
Hyper-Threading (All) = Disable  
Early Snoop = Disable  
Enforce POR = Disabled



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Hardware Availability: Sep-2014

Software Availability: Sep-2014

## General Notes

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

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

LD\_LIBRARY\_PATH = "/home/Trial/SPEC2006\_v11/libs/32:/home/Trial/SPEC2006\_v11/libs/64:/home/Trial/SPEC2006\_v11/sh"

OMP\_NUM\_THREADS = "24"

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.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



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## Base Optimization Flags

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

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

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## Peak Optimization Flags (Continued)

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:

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>



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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>

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

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