



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

SuperServer 6028TP-HTR  
(X10DRT-P , Intel Xeon E5-2680 v3)

SPECfp<sup>®</sup>2006 = **115**

SPECfp\_base2006 = **110**

CPU2006 license: 001176

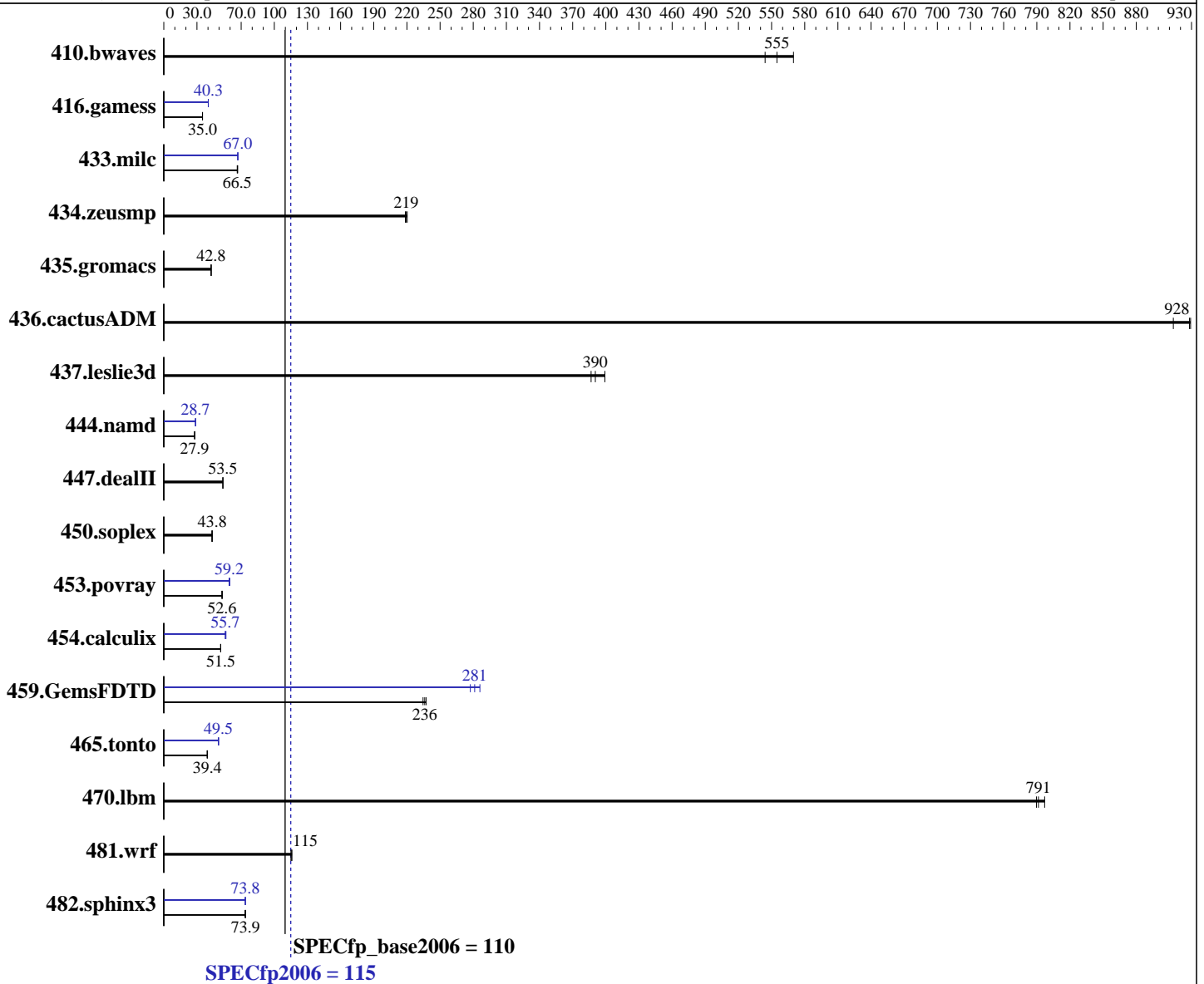
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



### Hardware

CPU Name: Intel Xeon E5-2680 v3  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2500  
 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: Red Hat Enterprise Linux Server release 7.0, Kernel 3.10.0-123.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 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	23.8	570	25.0	544	<u>24.5</u>	<u>555</u>	23.8	570	25.0	544	<u>24.5</u>	<u>555</u>
416.gamess	558	35.1	560	35.0	<u>560</u>	<u>35.0</u>	486	40.3	<u>486</u>	<u>40.3</u>	487	40.2
433.milc	138	66.5	<u>138</u>	<u>66.5</u>	137	66.9	137	66.9	<u>137</u>	<u>67.0</u>	137	67.0
434.zeusmp	41.3	220	41.6	219	<u>41.5</u>	<u>219</u>	41.3	220	41.6	219	<u>41.5</u>	<u>219</u>
435.gromacs	166	42.9	167	42.8	<u>167</u>	<u>42.8</u>	166	42.9	167	42.8	<u>167</u>	<u>42.8</u>
436.cactusADM	<u>12.9</u>	<u>928</u>	13.1	914	12.9	929	<u>12.9</u>	<u>928</u>	13.1	914	12.9	929
437.leslie3d	24.3	387	<u>24.1</u>	<u>390</u>	23.5	399	24.3	387	<u>24.1</u>	<u>390</u>	23.5	399
444.namd	287	27.9	<u>287</u>	<u>27.9</u>	287	27.9	279	28.7	279	28.7	<u>279</u>	<u>28.7</u>
447.dealII	214	53.5	214	53.5	<u>214</u>	<u>53.5</u>	214	53.5	214	53.5	<u>214</u>	<u>53.5</u>
450.soplex	<u>190</u>	<u>43.8</u>	192	43.5	190	43.9	<u>190</u>	<u>43.8</u>	192	43.5	190	43.9
453.povray	101	52.6	100	53.0	<u>101</u>	<u>52.6</u>	<u>89.8</u>	<u>59.2</u>	89.1	59.7	89.9	59.2
454.calculix	160	51.6	<u>160</u>	<u>51.5</u>	161	51.4	148	55.7	147	56.2	<u>148</u>	<u>55.7</u>
459.GemsFDTD	<u>44.9</u>	<u>236</u>	44.7	237	45.2	235	<u>37.7</u>	<u>281</u>	37.1	286	38.3	277
465.tonto	249	39.5	251	39.2	<u>250</u>	<u>39.4</u>	<u>199</u>	<u>49.5</u>	198	49.6	199	49.4
470.lbm	17.4	790	17.2	797	<u>17.4</u>	<u>791</u>	17.4	790	17.2	797	<u>17.4</u>	<u>791</u>
481.wrf	<u>96.9</u>	<u>115</u>	96.3	116	97.0	115	<u>96.9</u>	<u>115</u>	96.3	116	97.0	115
482.sphinx3	265	73.5	<u>264</u>	<u>73.9</u>	263	74.1	264	73.8	<u>264</u>	<u>73.8</u>	265	73.7

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

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