



SPEC[®] CFP2006 Result

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Supermicro

SuperServer 6028TP-HTR
(X10DRT-P, Intel Xeon E5-2697 v3)

SPECfp[®]2006 = 116

SPECfp_base2006 = 111

CPU2006 license: 001176

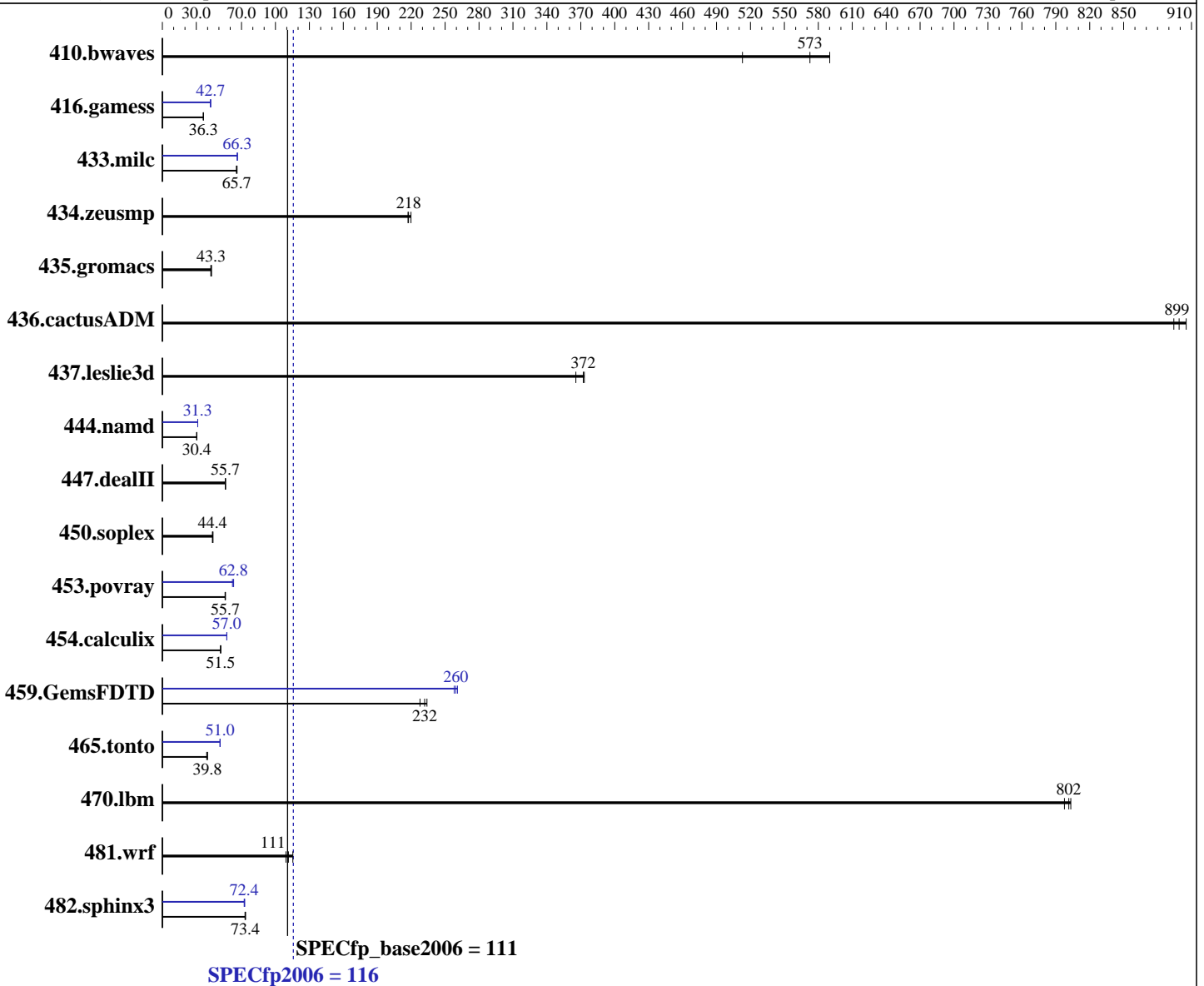
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2697 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 28 cores, 2 chips, 14 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: 35 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	26.5	513	<u>23.7</u>	<u>573</u>	23.0	590	26.5	513	<u>23.7</u>	<u>573</u>	23.0	590
416.gamess	<u>540</u>	<u>36.3</u>	541	36.2	539	36.3	458	42.7	<u>459</u>	<u>42.7</u>	461	42.4
433.milc	139	66.1	140	65.5	<u>140</u>	<u>65.7</u>	<u>138</u>	<u>66.3</u>	139	66.2	138	66.3
434.zeusmp	41.9	217	41.4	220	<u>41.8</u>	<u>218</u>	41.9	217	41.4	220	<u>41.8</u>	<u>218</u>
435.gromacs	<u>165</u>	<u>43.3</u>	165	43.4	167	42.8	<u>165</u>	<u>43.3</u>	165	43.4	167	42.8
436.cactusADM	13.4	894	13.2	905	<u>13.3</u>	<u>899</u>	13.4	894	13.2	905	<u>13.3</u>	<u>899</u>
437.leslie3d	25.7	366	<u>25.3</u>	<u>372</u>	25.2	373	25.7	366	<u>25.3</u>	<u>372</u>	25.2	373
444.namd	264	30.4	263	30.4	<u>264</u>	<u>30.4</u>	256	31.3	<u>256</u>	<u>31.3</u>	256	31.3
447.dealII	206	55.6	<u>205</u>	<u>55.7</u>	205	55.9	206	55.6	<u>205</u>	<u>55.7</u>	205	55.9
450.soplex	186	44.8	<u>188</u>	<u>44.4</u>	188	44.3	186	44.8	<u>188</u>	<u>44.4</u>	188	44.3
453.povray	95.4	55.8	<u>95.6</u>	<u>55.7</u>	96.0	55.4	<u>84.8</u>	<u>62.8</u>	85.8	62.0	84.4	63.0
454.calculix	160	51.4	<u>160</u>	<u>51.5</u>	160	51.6	<u>145</u>	<u>57.0</u>	145	57.0	145	57.0
459.GemsFDTD	<u>45.7</u>	<u>232</u>	46.6	228	45.3	234	<u>40.9</u>	<u>260</u>	41.1	258	40.7	261
465.tonto	<u>247</u>	<u>39.8</u>	247	39.9	251	39.2	193	51.0	<u>193</u>	<u>51.0</u>	192	51.1
470.lbm	<u>17.1</u>	<u>802</u>	17.1	803	17.2	798	<u>17.1</u>	<u>802</u>	17.1	803	17.2	798
481.wrf	96.8	115	<u>100</u>	<u>111</u>	102	109	96.8	115	<u>100</u>	<u>111</u>	102	109
482.sphinx3	<u>265</u>	<u>73.4</u>	265	73.5	267	73.1	<u>269</u>	<u>72.4</u>	269	72.4	267	72.9

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
Enforce POR = Disable
Hyper-Threading (ALL) = Disable



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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/Trial/SPEC2006_v11/libs/32:/home/Trial/SPEC2006_v11/libs/64:/home/Trial/SPEC2006_v11/sh"

OMP_NUM_THREADS = "28"

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.

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