



SPEC[®] CFP2006 Result

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Supermicro

SuperServer 6028TP-HTFR
(X10DRT-PIBF, Intel Xeon E5-2660 v3)

SPECfp[®]2006 = 114

SPECfp_base2006 = 109

CPU2006 license: 001176

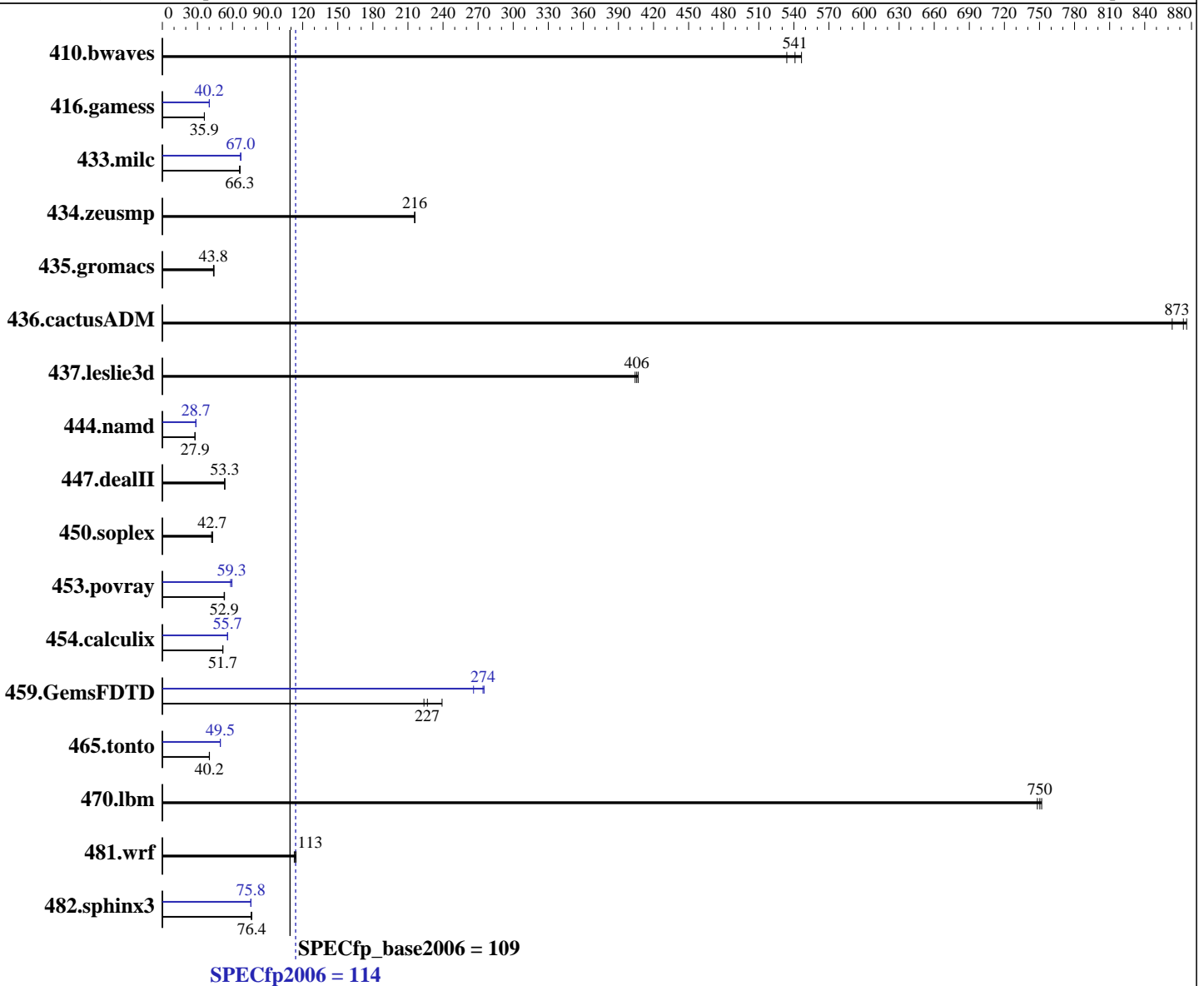
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Nov-2014

Hardware Availability: Sep-2014

Software Availability: Sep-2014



Hardware

CPU Name: Intel Xeon E5-2660 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 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: 25 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	24.9	547	<u>25.1</u>	<u>541</u>	25.5	534	24.9	547	<u>25.1</u>	<u>541</u>	25.5	534
416.gamess	<u>545</u>	<u>35.9</u>	545	35.9	545	36.0	<u>487</u>	<u>40.2</u>	487	40.2	489	40.1
433.milc	138	66.4	139	66.0	<u>139</u>	<u>66.3</u>	137	67.1	137	66.9	<u>137</u>	<u>67.0</u>
434.zeusmp	42.2	216	<u>42.2</u>	<u>216</u>	42.2	216	42.2	216	<u>42.2</u>	<u>216</u>	42.2	216
435.gromacs	163	43.7	161	44.2	<u>163</u>	<u>43.8</u>	163	43.7	161	44.2	<u>163</u>	<u>43.8</u>
436.cactusADM	13.6	876	<u>13.7</u>	<u>873</u>	13.8	863	13.6	876	<u>13.7</u>	<u>873</u>	13.8	863
437.leslie3d	23.3	404	23.1	407	<u>23.2</u>	<u>406</u>	23.3	404	23.1	407	<u>23.2</u>	<u>406</u>
444.namd	<u>287</u>	<u>27.9</u>	287	27.9	287	27.9	279	28.7	280	28.7	<u>279</u>	<u>28.7</u>
447.dealII	<u>214</u>	<u>53.3</u>	214	53.4	215	53.2	<u>214</u>	<u>53.3</u>	214	53.4	215	53.2
450.soplex	<u>195</u>	<u>42.7</u>	194	43.0	198	42.1	<u>195</u>	<u>42.7</u>	194	43.0	198	42.1
453.povray	101	52.9	<u>101</u>	<u>52.9</u>	100	53.2	89.4	59.5	<u>89.7</u>	<u>59.3</u>	91.2	58.3
454.calculix	160	51.7	160	51.7	<u>160</u>	<u>51.7</u>	148	55.7	<u>148</u>	<u>55.7</u>	148	55.8
459.GemsFDTD	44.4	239	47.4	224	<u>46.8</u>	<u>227</u>	39.9	266	<u>38.7</u>	<u>274</u>	38.6	275
465.tonto	<u>245</u>	<u>40.2</u>	244	40.3	245	40.1	198	49.6	<u>199</u>	<u>49.5</u>	199	49.5
470.lbm	18.4	748	<u>18.3</u>	<u>750</u>	18.3	752	18.4	748	<u>18.3</u>	<u>750</u>	18.3	752
481.wrf	97.7	114	99.0	113	<u>98.5</u>	<u>113</u>	97.7	114	99.0	113	<u>98.5</u>	<u>113</u>
482.sphinx3	257	75.9	<u>255</u>	<u>76.4</u>	255	76.5	258	75.6	257	75.8	<u>257</u>	<u>75.8</u>

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 = "20"

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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