



SPEC[®] CFP2006 Result

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Supermicro

SuperServer 1028GR-TR
(X10DRG-H , Intel Xeon E5-2680 v3)

SPECfp[®]2006 = 117

SPECfp_base2006 = 112

CPU2006 license: 001176

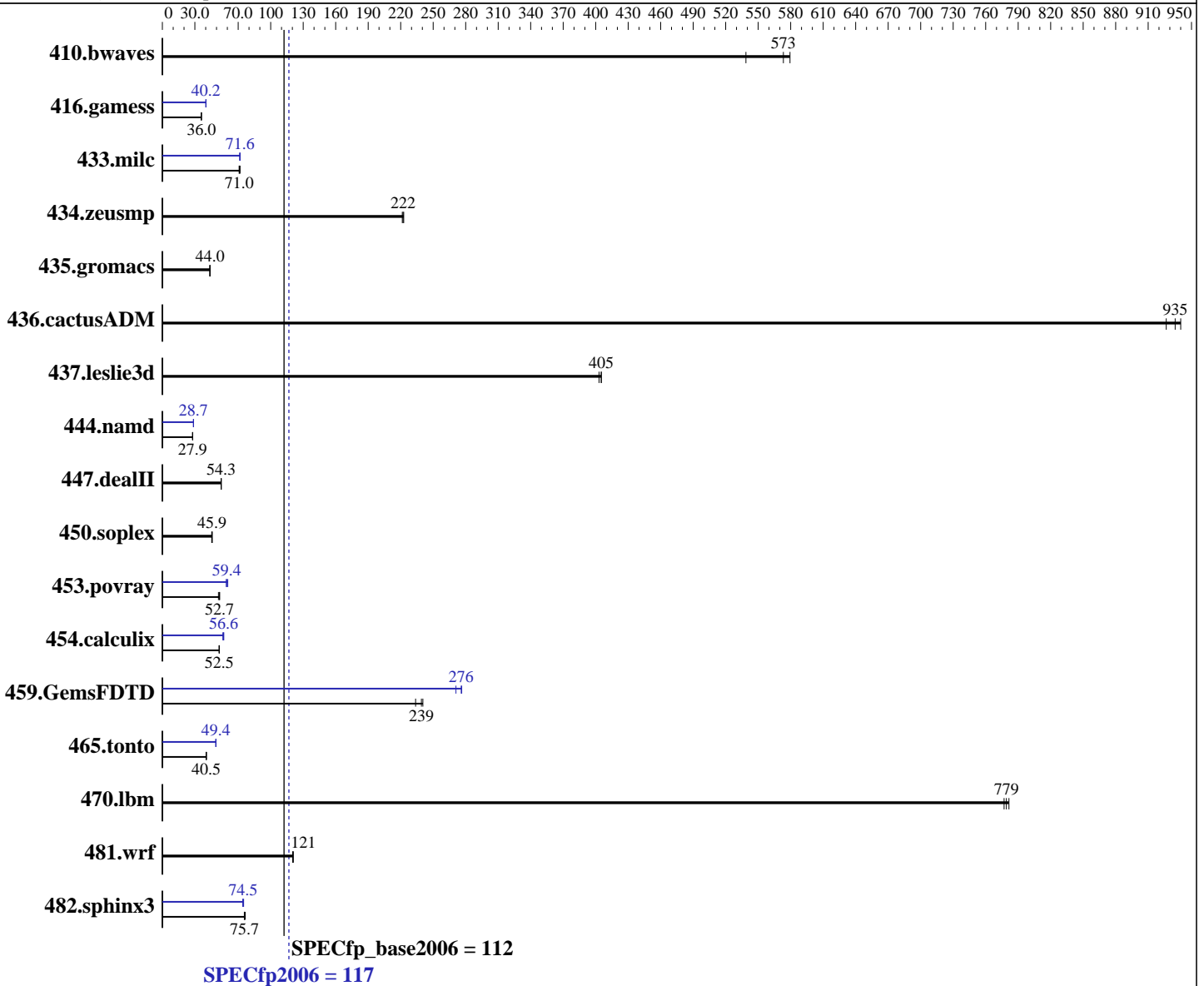
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Oct-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

Continued on next page

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)

Continued on next page



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L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (8 x 16 GB 2Rx4 PC4-2133P-R)
Disk Subsystem: 1 x 400 GB SATA III, SSD
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	25.2	539	<u>23.7</u>	<u>573</u>	23.5	579	25.2	539	<u>23.7</u>	<u>573</u>	23.5	579
416.gamess	543	36.0	<u>544</u>	<u>36.0</u>	545	35.9	<u>487</u>	<u>40.2</u>	487	40.2	487	40.2
433.milc	<u>129</u>	<u>71.0</u>	129	70.9	128	71.8	<u>128</u>	<u>71.6</u>	128	71.7	129	71.4
434.zeusmp	41.1	221	40.8	223	<u>41.0</u>	<u>222</u>	41.1	221	40.8	223	<u>41.0</u>	<u>222</u>
435.gromacs	163	43.8	<u>162</u>	<u>44.0</u>	162	44.0	163	43.8	<u>162</u>	<u>44.0</u>	162	44.0
436.cactusADM	12.7	940	<u>12.8</u>	<u>935</u>	12.9	927	12.7	940	<u>12.8</u>	<u>935</u>	12.9	927
437.leslie3d	23.2	405	23.3	403	<u>23.2</u>	<u>405</u>	23.2	405	23.3	403	<u>23.2</u>	<u>405</u>
444.namd	287	28.0	287	27.9	<u>287</u>	<u>27.9</u>	<u>279</u>	<u>28.7</u>	279	28.7	279	28.7
447.dealII	210	54.4	211	54.3	<u>211</u>	<u>54.3</u>	210	54.4	211	54.3	<u>211</u>	<u>54.3</u>
450.soplex	181	46.0	<u>182</u>	<u>45.9</u>	183	45.6	181	46.0	<u>182</u>	<u>45.9</u>	183	45.6
453.povray	<u>101</u>	<u>52.7</u>	101	52.9	103	51.8	90.2	59.0	<u>89.5</u>	<u>59.4</u>	88.1	60.4
454.calculix	<u>157</u>	<u>52.5</u>	157	52.5	157	52.4	<u>146</u>	<u>56.6</u>	146	56.7	148	55.8
459.GemsFDTD	45.4	234	44.1	240	<u>44.4</u>	<u>239</u>	<u>38.5</u>	<u>276</u>	39.2	271	38.4	276
465.tonto	241	40.8	<u>243</u>	<u>40.5</u>	244	40.3	<u>199</u>	<u>49.4</u>	199	49.5	199	49.3
470.lbm	17.6	781	<u>17.6</u>	<u>779</u>	17.7	777	17.6	781	<u>17.6</u>	<u>779</u>	17.7	777
481.wrf	92.9	120	<u>92.6</u>	<u>121</u>	92.4	121	92.9	120	<u>92.6</u>	<u>121</u>	92.4	121
482.sphinx3	255	76.5	258	75.6	<u>257</u>	<u>75.7</u>	260	75.0	<u>261</u>	<u>74.5</u>	263	74.2

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
Execute Disable Bit = Disable
Intel Virtualization Technology = Disable
Early Snoop = Enable



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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/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/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-revG.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-revG.xml>

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