



SPEC® CFP2006 Result

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Supermicro

SuperServer 1028GR-TR
(X10DRG-H , Intel Xeon E5-2690 v3)

SPECfp®2006 = **120**

SPECfp_base2006 = **115**

CPU2006 license: 001176

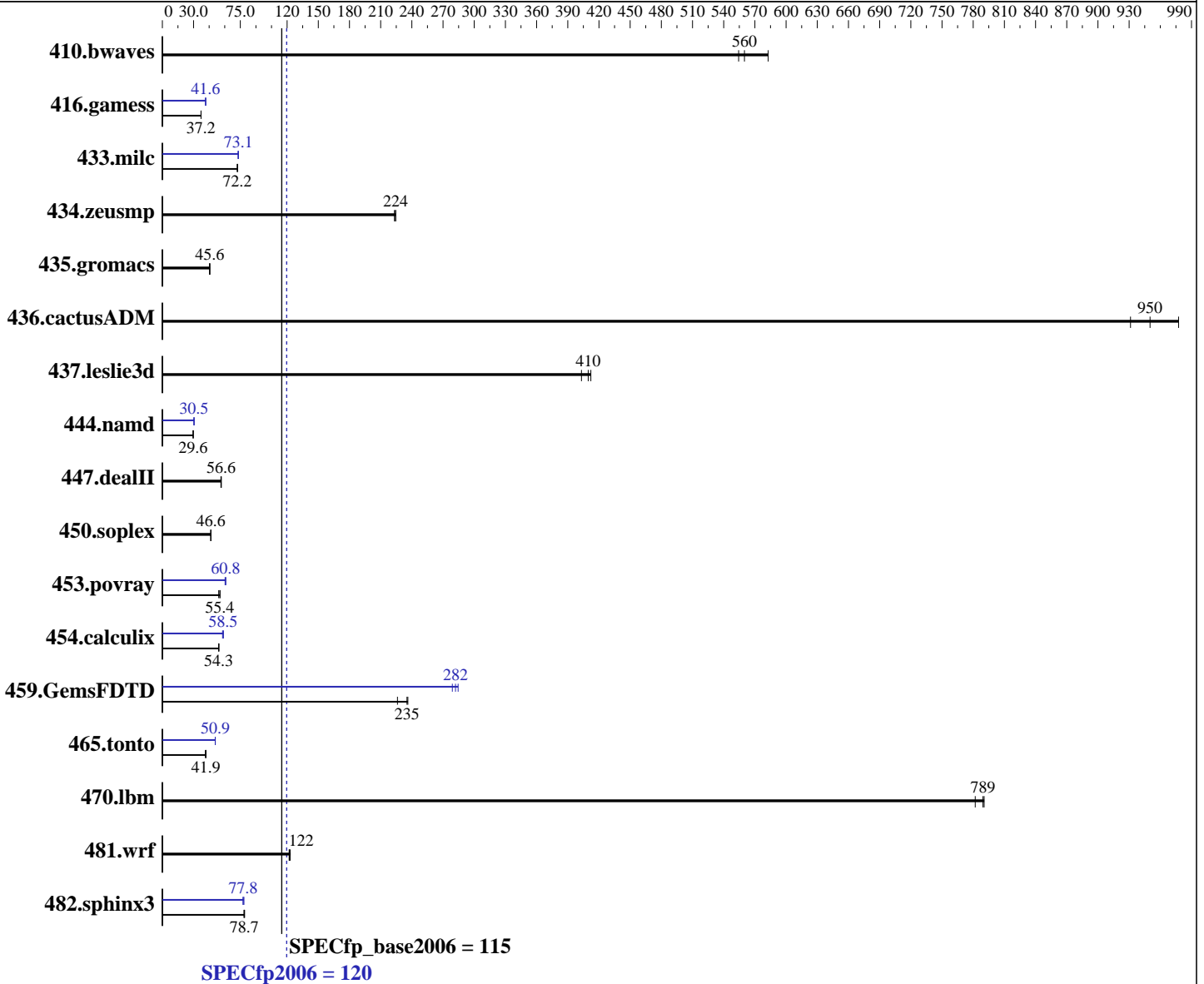
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2014

Hardware Availability: Sep-2014

Software Availability: Oct-2014



Hardware

CPU Name: Intel Xeon E5-2690 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: 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: 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	24.5	554	<u>24.3</u>	<u>560</u>	23.3	583	24.5	554	<u>24.3</u>	<u>560</u>	23.3	583
416.gamess	<u>526</u>	<u>37.2</u>	526	37.2	526	37.2	471	41.6	470	41.6	<u>470</u>	<u>41.6</u>
433.milc	127	72.4	127	72.1	<u>127</u>	<u>72.2</u>	126	72.9	<u>126</u>	<u>73.1</u>	126	73.1
434.zeusmp	<u>40.6</u>	<u>224</u>	40.6	224	40.8	223	<u>40.6</u>	<u>224</u>	40.6	224	40.8	223
435.gromacs	<u>157</u>	<u>45.6</u>	156	45.7	158	45.3	<u>157</u>	<u>45.6</u>	156	45.7	158	45.3
436.cactusADM	12.2	978	<u>12.6</u>	<u>950</u>	12.8	931	12.2	978	<u>12.6</u>	<u>950</u>	12.8	931
437.leslie3d	23.3	403	22.8	412	<u>22.9</u>	<u>410</u>	23.3	403	22.8	412	<u>22.9</u>	<u>410</u>
444.namd	270	29.7	271	29.6	<u>271</u>	<u>29.6</u>	<u>263</u>	<u>30.5</u>	263	30.4	263	30.5
447.dealII	203	56.3	<u>202</u>	<u>56.6</u>	202	56.6	203	56.3	<u>202</u>	<u>56.6</u>	202	56.6
450.soplex	<u>179</u>	<u>46.6</u>	179	46.6	179	46.7	<u>179</u>	<u>46.6</u>	179	46.6	179	46.7
453.povray	<u>96.1</u>	<u>55.4</u>	98.2	54.2	96.0	55.4	<u>87.5</u>	<u>60.8</u>	87.2	61.0	88.2	60.3
454.calculix	152	54.3	152	54.2	<u>152</u>	<u>54.3</u>	141	58.7	<u>141</u>	<u>58.5</u>	142	57.9
459.GemsFDTD	44.9	236	<u>45.1</u>	<u>235</u>	46.9	226	38.0	279	<u>37.6</u>	<u>282</u>	37.3	285
465.tonto	<u>235</u>	<u>41.9</u>	238	41.4	235	42.0	194	50.8	<u>193</u>	<u>50.9</u>	193	50.9
470.lbm	17.6	782	<u>17.4</u>	<u>789</u>	17.4	791	17.6	782	<u>17.4</u>	<u>789</u>	17.4	791
481.wrf	90.8	123	91.6	122	<u>91.5</u>	<u>122</u>	90.8	123	91.6	122	<u>91.5</u>	<u>122</u>
482.sphinx3	<u>248</u>	<u>78.7</u>	246	79.1	248	78.6	251	77.6	<u>250</u>	<u>77.8</u>	248	78.5

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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