



SPEC[®] CFP2006 Result

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Supermicro

SuperServer F627R2-F72+
(X9DRFF-7+ , Intel Xeon E5-2690 v2)

SPECfp[®]2006 = **108**

SPECfp_base2006 = **104**

CPU2006 license: 001176

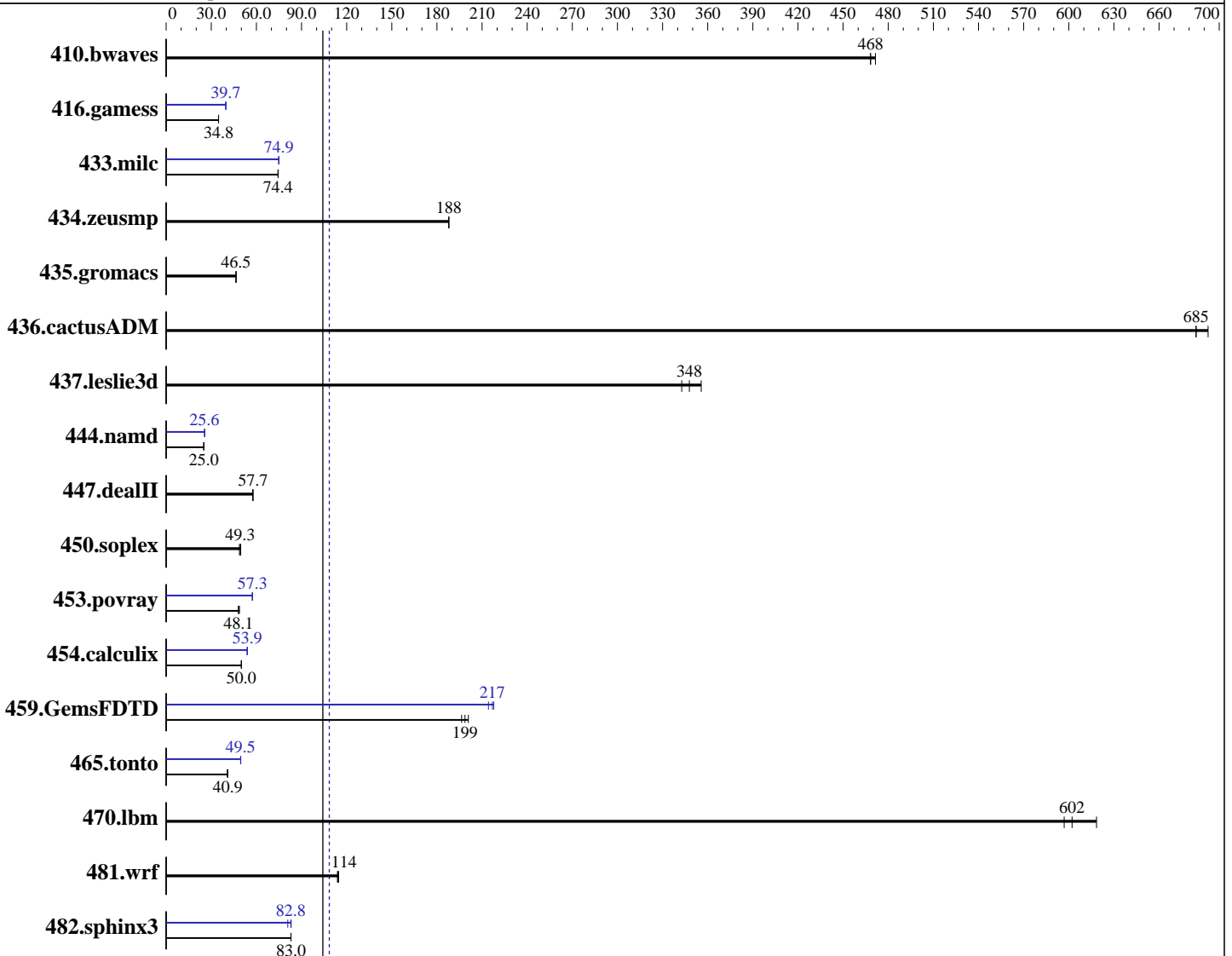
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Oct-2013



SPECfp_base2006 = 104

SPECfp2006 = 108

Hardware

CPU Name: Intel Xeon E5-2690 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz
 CPU MHz: 3000
 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

Continued on next page

Software

Operating System: Red Hat Enterprise Linux Server release 6.4, Kernel 2.6.32-358.23.2.el6.x86_64
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 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: 25 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (16 x 8 GB 2Rx4 PC3-14900R-13, ECC)
Disk Subsystem: 1 x 512 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	<u>29.0</u>	<u>468</u>	29.0	468	28.8	471	<u>29.0</u>	<u>468</u>	29.0	468	28.8	471
416.gamess	<u>562</u>	<u>34.8</u>	562	34.9	562	34.8	493	39.7	493	39.7	<u>493</u>	<u>39.7</u>
433.milc	<u>123</u>	<u>74.4</u>	123	74.4	123	74.4	<u>123</u>	<u>74.9</u>	122	75.0	123	74.8
434.zeusmp	48.4	188	48.4	188	<u>48.4</u>	<u>188</u>	48.4	188	48.4	188	<u>48.4</u>	<u>188</u>
435.gromacs	<u>154</u>	<u>46.5</u>	154	46.4	154	46.5	<u>154</u>	<u>46.5</u>	154	46.4	154	46.5
436.cactusADM	17.3	693	<u>17.5</u>	<u>685</u>	17.5	685	17.3	693	<u>17.5</u>	<u>685</u>	17.5	685
437.leslie3d	26.4	356	27.4	343	<u>27.0</u>	<u>348</u>	26.4	356	27.4	343	<u>27.0</u>	<u>348</u>
444.namd	320	25.0	320	25.1	<u>320</u>	<u>25.0</u>	314	25.6	314	25.6	<u>314</u>	<u>25.6</u>
447.dealII	198	57.7	<u>198</u>	<u>57.7</u>	199	57.6	198	57.7	<u>198</u>	<u>57.7</u>	199	57.6
450.soplex	168	49.6	171	48.7	<u>169</u>	<u>49.3</u>	168	49.6	171	48.7	<u>169</u>	<u>49.3</u>
453.povray	109	48.7	<u>111</u>	<u>48.1</u>	111	48.1	92.9	57.3	92.6	57.5	<u>92.9</u>	<u>57.3</u>
454.calculix	165	50.1	<u>165</u>	<u>50.0</u>	165	49.9	153	53.9	<u>153</u>	<u>53.9</u>	153	53.9
459.GemsFDTD	54.0	196	52.8	201	<u>53.4</u>	<u>199</u>	48.7	218	49.5	214	<u>48.9</u>	<u>217</u>
465.tonto	242	40.6	<u>241</u>	<u>40.9</u>	240	41.0	198	49.6	199	49.5	<u>199</u>	<u>49.5</u>
470.lbm	23.0	597	22.2	618	<u>22.8</u>	<u>602</u>	23.0	597	22.2	618	<u>22.8</u>	<u>602</u>
481.wrf	97.4	115	98.0	114	<u>98.0</u>	<u>114</u>	97.4	115	98.0	114	<u>98.0</u>	<u>114</u>
482.sphinx3	235	83.0	<u>235</u>	<u>83.0</u>	235	83.0	241	80.9	<u>235</u>	<u>82.8</u>	234	83.1

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 Configuration:
Hyper-threading = Disabled

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,0,1"
LD_LIBRARY_PATH = "/home/cpu/libs/32:/home/cpu/libs/64:/home/cpu/sh"
OMP_NUM_THREADS = "20"

Continued on next page



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General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

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.lelie3d: -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

Base Optimization Flags

C benchmarks:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

Continued on next page



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Base Optimization Flags (Continued)

C++ benchmarks:

`-xAVX -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias`

Fortran benchmarks:

`-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch`

Benchmarks using both Fortran and C:

`-xAVX -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: `-xAVX(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: `-xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
-parallel`

C++ benchmarks:

444.namd: `-xAVX(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`

Continued on next page



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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX(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: -xAVX -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-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revB.20130719.xml>



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Tested with SPEC CPU2006 v1.2.
Report generated on Thu Jul 24 19:14:14 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 November 2013.