



SPEC® CFP2006 Result

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Supermicro

SuperServer 6027R-TRF
(X9DRi-F, Intel Xeon E5-2697 v2)

SPECfp®2006 = 104

SPECfp_base2006 = 98.6

CPU2006 license: 001176

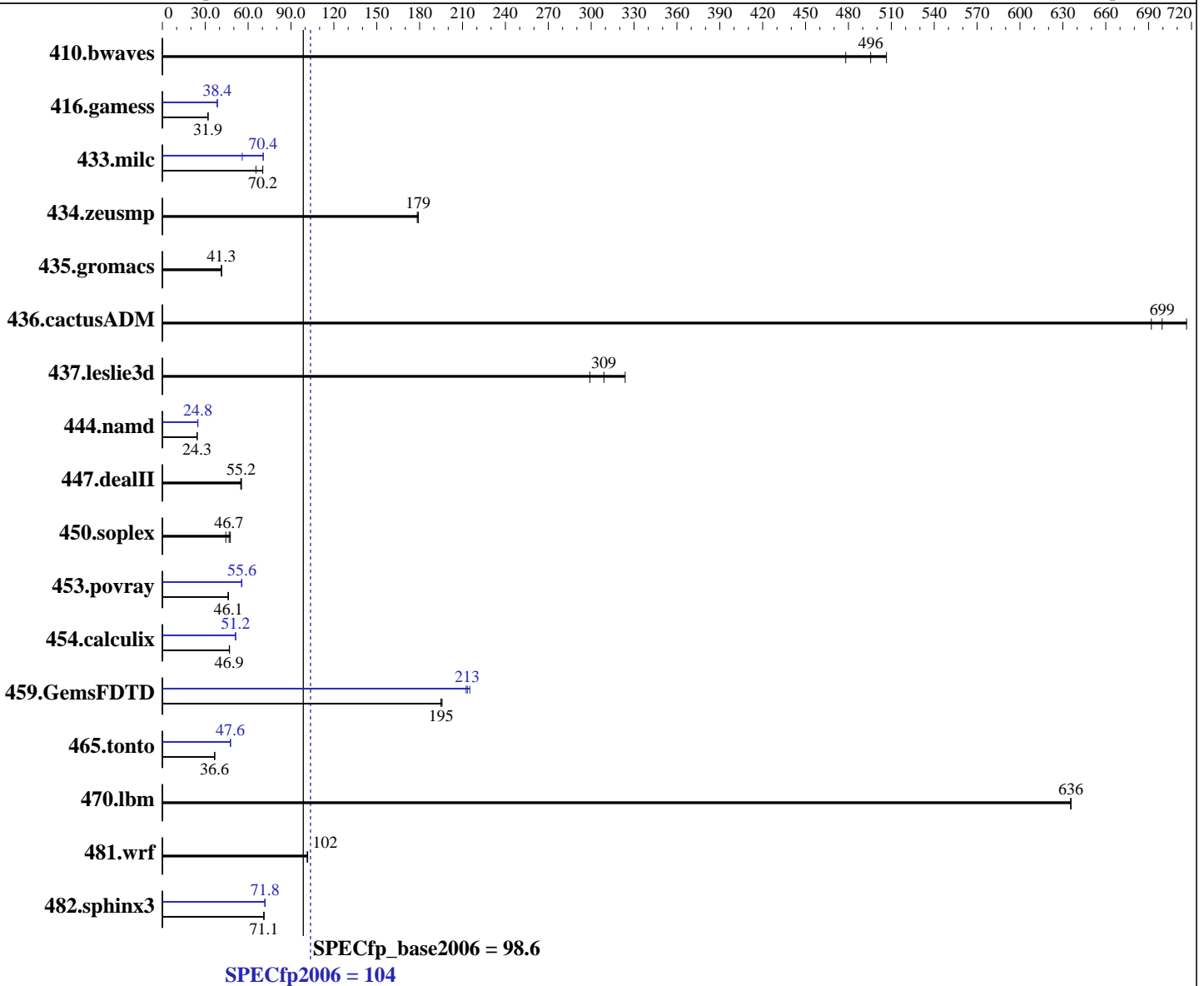
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Sep-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2697 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 2700
 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 6.4, Kernel 2.6.32-358.18.1.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)

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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 PC3-14900R-13, ECC)
Disk Subsystem: 1 x 1TB SATA II, 5400 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	26.8	507	28.4	478	<u>27.4</u>	<u>496</u>	26.8	507	28.4	478	<u>27.4</u>	<u>496</u>
416.gamess	614	31.9	<u>613</u>	<u>31.9</u>	613	32.0	509	38.5	<u>509</u>	<u>38.4</u>	510	38.4
433.milc	140	65.5	<u>131</u>	<u>70.2</u>	131	70.3	130	70.7	<u>130</u>	<u>70.4</u>	164	55.9
434.zeusmp	51.0	178	<u>50.8</u>	<u>179</u>	50.8	179	51.0	178	<u>50.8</u>	<u>179</u>	50.8	179
435.gromacs	<u>173</u>	<u>41.3</u>	173	41.3	173	41.4	<u>173</u>	<u>41.3</u>	173	41.3	173	41.4
436.cactusADM	<u>17.1</u>	<u>699</u>	16.7	717	17.3	692	<u>17.1</u>	<u>699</u>	16.7	717	17.3	692
437.leslie3d	31.4	299	29.0	324	<u>30.4</u>	<u>309</u>	31.4	299	29.0	324	<u>30.4</u>	<u>309</u>
444.namd	330	24.3	330	24.3	<u>330</u>	<u>24.3</u>	323	24.8	<u>323</u>	<u>24.8</u>	323	24.8
447.dealII	<u>207</u>	<u>55.2</u>	207	55.3	209	54.8	<u>207</u>	<u>55.2</u>	207	55.3	209	54.8
450.soplex	175	47.6	188	44.4	<u>179</u>	<u>46.7</u>	175	47.6	188	44.4	<u>179</u>	<u>46.7</u>
453.povray	<u>115</u>	<u>46.1</u>	115	46.2	116	46.0	95.6	55.6	96.2	55.3	<u>95.6</u>	<u>55.6</u>
454.calculix	175	47.0	176	46.9	<u>176</u>	<u>46.9</u>	<u>161</u>	<u>51.2</u>	161	51.2	161	51.2
459.GemsFDTD	54.2	196	54.4	195	<u>54.4</u>	<u>195</u>	49.9	213	<u>49.7</u>	<u>213</u>	49.3	215
465.tonto	269	36.6	<u>269</u>	<u>36.6</u>	269	36.6	207	47.6	<u>207</u>	<u>47.6</u>	206	47.7
470.lbm	<u>21.6</u>	<u>636</u>	21.6	636	21.6	636	<u>21.6</u>	<u>636</u>	21.6	636	21.6	636
481.wrf	110	102	110	101	<u>110</u>	<u>102</u>	110	102	110	101	<u>110</u>	<u>102</u>
482.sphinx3	<u>274</u>	<u>71.1</u>	274	71.2	275	70.9	271	71.8	<u>271</u>	<u>71.8</u>	272	71.7

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:

Disable Hyper-threading, C1E Support, DRAM RAPL Mode, Patrol Scrub, Demand Scrub, Double Refresh.
Set Package C-state Limit to C0

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"

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General Notes (Continued)

OMP_NUM_THREADS = "24"

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.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.deallI: -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:
-xAVX -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias

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

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Peak Optimization Flags (Continued)

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

447.dealIII: 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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For other inquiries, please contact webmaster@spec.org.

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