



SPEC[®] CFP2006 Result

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Supermicro

SuperServer SYS-7047R-TRF
(X9DRi-F, Intel Xeon E5-2650 v2)

SPECfp[®]2006 = **98.7**

SPECfp_base2006 = **94.2**

CPU2006 license: 001176

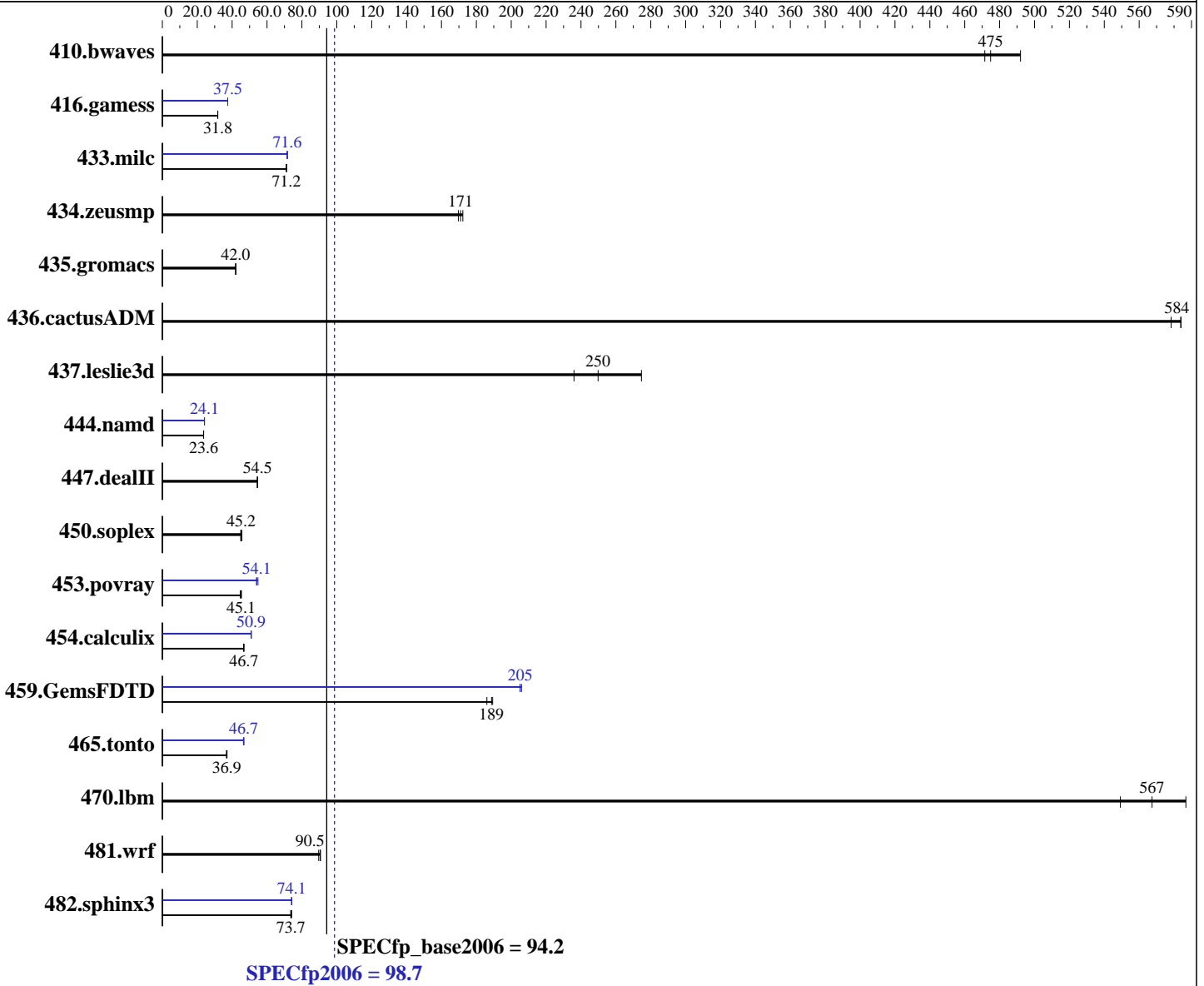
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Oct-2013

Hardware Availability: Oct-2013

Software Availability: Sep-2013



Hardware

CPU Name: Intel Xeon E5-2650 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.40 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip
 CPU(s) orderable: 1,2 chip
 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: 20 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 500 GB SATA, 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	28.8	471	27.6	492	<u>28.6</u>	<u>475</u>	28.8	471	27.6	492	<u>28.6</u>	<u>475</u>
416.gamess	<u>617</u>	<u>31.8</u>	616	31.8	617	31.7	522	37.5	<u>523</u>	<u>37.5</u>	523	37.5
433.milc	129	71.0	129	71.2	<u>129</u>	<u>71.2</u>	<u>128</u>	<u>71.6</u>	128	71.7	128	71.5
434.zeusmp	52.8	172	53.6	170	<u>53.2</u>	<u>171</u>	52.8	172	53.6	170	<u>53.2</u>	<u>171</u>
435.gromacs	170	42.1	170	42.0	<u>170</u>	<u>42.0</u>	170	42.1	170	42.0	<u>170</u>	<u>42.0</u>
436.cactusADM	<u>20.5</u>	<u>584</u>	20.7	578	20.5	584	<u>20.5</u>	<u>584</u>	20.7	578	20.5	584
437.leslie3d	39.8	236	34.2	275	<u>37.6</u>	<u>250</u>	39.8	236	34.2	275	<u>37.6</u>	<u>250</u>
444.namd	339	23.7	<u>339</u>	<u>23.6</u>	339	23.6	332	24.1	<u>332</u>	<u>24.1</u>	332	24.1
447.dealII	<u>210</u>	<u>54.5</u>	210	54.5	210	54.5	<u>210</u>	<u>54.5</u>	210	54.5	210	54.5
450.soplex	<u>185</u>	<u>45.2</u>	183	45.6	186	44.9	<u>185</u>	<u>45.2</u>	183	45.6	186	44.9
453.povray	117	45.3	119	44.6	<u>118</u>	<u>45.1</u>	97.0	54.8	98.6	54.0	<u>98.3</u>	<u>54.1</u>
454.calculix	177	46.6	<u>177</u>	<u>46.7</u>	176	46.8	162	50.9	<u>162</u>	<u>50.9</u>	162	50.9
459.GemsFDTD	<u>56.2</u>	<u>189</u>	57.0	186	56.0	189	51.7	205	51.5	206	<u>51.7</u>	<u>205</u>
465.tonto	<u>267</u>	<u>36.9</u>	268	36.8	265	37.1	212	46.5	<u>211</u>	<u>46.7</u>	211	46.7
470.lbm	23.4	587	<u>24.2</u>	<u>567</u>	25.0	549	23.4	587	<u>24.2</u>	<u>567</u>	25.0	549
481.wrf	<u>123</u>	<u>90.5</u>	125	89.6	123	90.6	<u>123</u>	<u>90.5</u>	125	89.6	123	90.6
482.sphinx3	265	73.6	263	74.1	<u>264</u>	<u>73.7</u>	<u>263</u>	<u>74.1</u>	263	74.2	263	74.0

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

Hyper-threading disabled in BIOS Setup.

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 = "16"

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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

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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`

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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-revD.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-revD.xml>



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