



SPEC® CFP2006 Result

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Supermicro

SuperServer 7047R-TXRF (X9DRX+-F, Intel Xeon E5-2630L)

SPECfp®2006 = 64.6

SPECfp_base2006 = 61.0

CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Apr-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-2630L
 CPU Characteristics: Intel Turbo Boost Technology up to 2.50 GHz
 CPU MHz: 2000
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 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 6.2, Kernel 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext3
 System State: Run level 3 (multi-user)

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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (16 x 16 GB 1Rx4 PC3-12800R-11, ECC)
Disk Subsystem: 1 x 2 TB SATA II, 7200 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	47.3	288	45.9	296	<u>46.1</u>	<u>295</u>	<u>45.7</u>	<u>298</u>	47.3	288	45.5	299
416.gamess	890	22.0	880	22.3	<u>886</u>	<u>22.1</u>	749	26.2	<u>749</u>	<u>26.2</u>	749	26.1
433.milc	<u>209</u>	<u>43.8</u>	209	43.9	210	43.8	189	48.7	191	48.0	<u>189</u>	<u>48.6</u>
434.zeusmp	81.7	111	82.1	111	<u>82.1</u>	<u>111</u>	81.7	111	82.1	111	<u>82.1</u>	<u>111</u>
435.gromacs	296	24.1	297	24.1	<u>296</u>	<u>24.1</u>	296	24.1	297	24.1	<u>296</u>	<u>24.1</u>
436.cactusADM	<u>33.5</u>	<u>356</u>	33.5	356	34.5	346	<u>33.5</u>	<u>356</u>	33.5	356	34.5	346
437.leslie3d	66.1	142	<u>63.9</u>	<u>147</u>	63.3	149	66.1	142	<u>63.9</u>	<u>147</u>	63.3	149
444.namd	471	17.0	<u>472</u>	<u>17.0</u>	472	17.0	463	17.3	464	17.3	<u>464</u>	<u>17.3</u>
447.dealII	<u>301</u>	<u>38.0</u>	301	38.0	299	38.2	<u>301</u>	<u>38.0</u>	301	38.0	299	38.2
450.soplex	266	31.3	<u>267</u>	<u>31.3</u>	273	30.5	266	31.3	<u>267</u>	<u>31.3</u>	273	30.5
453.povray	169	31.5	170	31.2	<u>170</u>	<u>31.3</u>	145	36.6	<u>143</u>	<u>37.2</u>	143	37.3
454.calculix	<u>290</u>	<u>28.4</u>	289	28.6	292	28.3	<u>269</u>	<u>30.7</u>	267	30.9	269	30.7
459.GemsFDTD	90.7	117	90.1	118	<u>90.5</u>	<u>117</u>	76.0	140	76.6	139	<u>76.0</u>	<u>140</u>
465.tonto	390	25.3	<u>391</u>	<u>25.2</u>	392	25.1	<u>311</u>	<u>31.6</u>	310	31.8	316	31.2
470.lbm	40.2	341	<u>39.4</u>	<u>348</u>	38.4	357	40.2	341	<u>39.4</u>	<u>348</u>	38.4	357
481.wrf	195	57.4	192	58.3	<u>193</u>	<u>57.9</u>	195	57.4	192	58.3	<u>193</u>	<u>57.9</u>
482.sphinx3	<u>370</u>	<u>52.7</u>	371	52.6	369	52.8	369	52.9	363	53.7	<u>365</u>	<u>53.4</u>

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"

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"
OMP_NUM_THREADS = "12"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled



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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 -static -parallel -opt-prefetch
-ansi-alias

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

Fortran benchmarks:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias



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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) -static -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

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: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

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Peak Optimization Flags (Continued)

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- -static

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 file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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