



# SPEC® CFP2006 Result

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## Supermicro

SPECfp®2006 = **82.6**

SuperServer 7047R-TXRF (X9DRX+-F, Intel E5-2670)

SPECfp\_base2006 = **79.1**

CPU2006 license: 001176

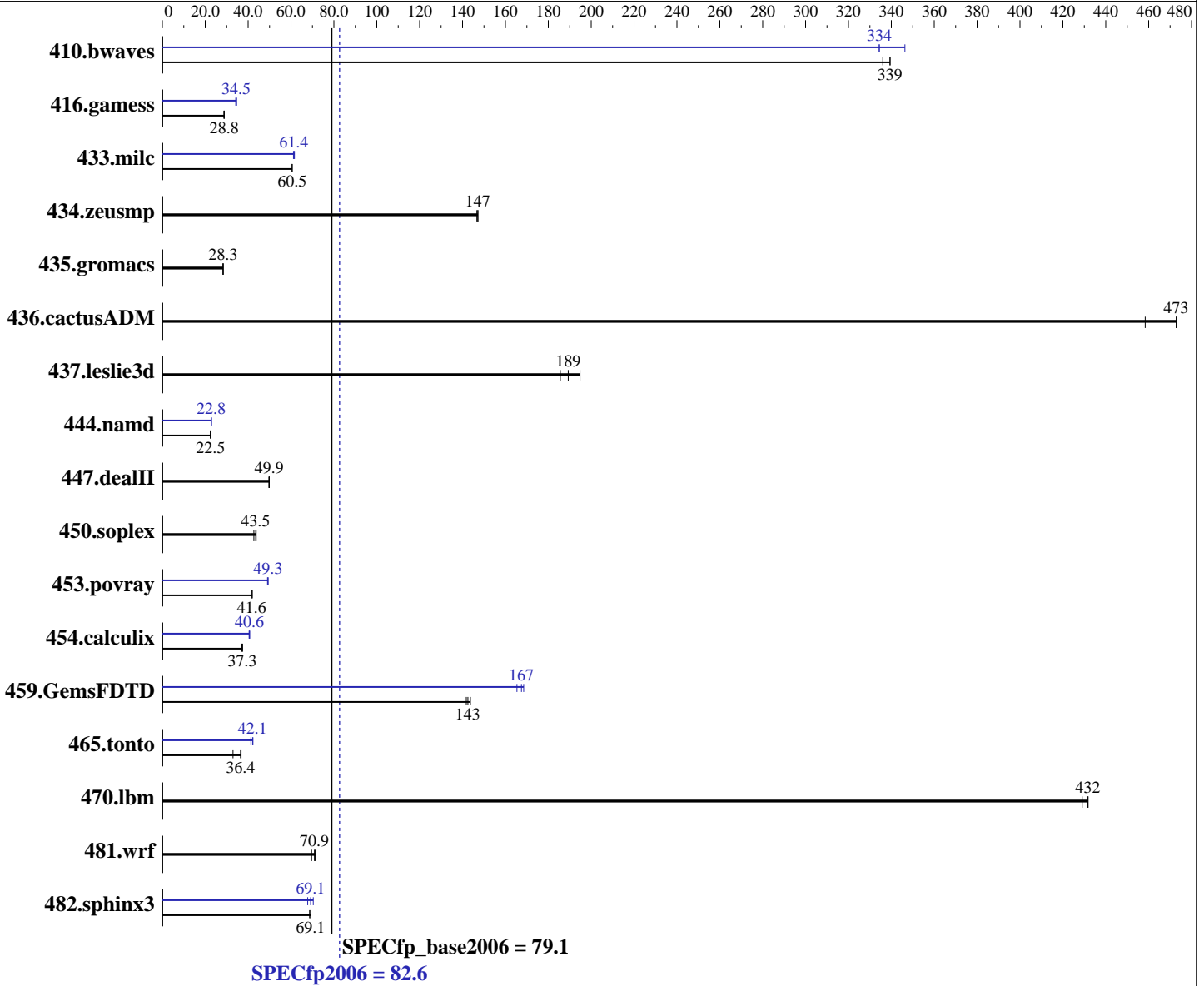
Test date: Mar-2012

Test sponsor: Supermicro

Hardware Availability: Mar-2012

Tested by: Supermicro

Software Availability: Dec-2011



**Hardware**

CPU Name: Intel Xeon E5-2670  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 16 cores, 2 chips, 8 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: 20 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	40.4	336	40.0	339	<b>40.0</b>	<b>339</b>	39.2	346	<b>40.6</b>	<b>334</b>	40.6	334
416.gamess	679	28.8	680	28.8	<b>680</b>	<b>28.8</b>	<b>568</b>	<b>34.5</b>	572	34.2	566	34.6
433.milc	152	60.6	153	60.1	<b>152</b>	<b>60.5</b>	150	61.1	149	61.6	<b>150</b>	<b>61.4</b>
434.zeusmp	61.8	147	62.0	147	<b>61.8</b>	<b>147</b>	61.8	147	62.0	147	<b>61.8</b>	<b>147</b>
435.gromacs	<b>252</b>	<b>28.3</b>	252	28.3	252	28.4	<b>252</b>	<b>28.3</b>	252	28.3	252	28.4
436.cactusADM	25.3	473	26.1	458	<b>25.3</b>	<b>473</b>	25.3	473	26.1	458	<b>25.3</b>	<b>473</b>
437.leslie3d	<b>49.7</b>	<b>189</b>	50.6	186	48.3	195	<b>49.7</b>	<b>189</b>	50.6	186	48.3	195
444.namd	357	22.5	357	22.5	<b>357</b>	<b>22.5</b>	351	22.8	<b>351</b>	<b>22.8</b>	351	22.8
447.dealII	229	49.9	230	49.7	<b>229</b>	<b>49.9</b>	229	49.9	230	49.7	<b>229</b>	<b>49.9</b>
450.soplex	191	43.8	195	42.7	<b>192</b>	<b>43.5</b>	191	43.8	195	42.7	<b>192</b>	<b>43.5</b>
453.povray	<b>128</b>	<b>41.6</b>	127	42.0	128	41.6	108	49.1	108	49.3	<b>108</b>	<b>49.3</b>
454.calculix	222	37.1	<b>221</b>	<b>37.3</b>	221	37.4	<b>203</b>	<b>40.6</b>	204	40.5	202	40.8
459.GemsFDTD	74.9	142	73.8	144	<b>74.5</b>	<b>143</b>	64.2	165	63.0	169	<b>63.4</b>	<b>167</b>
465.tonto	299	33.0	<b>270</b>	<b>36.4</b>	268	36.7	238	41.3	<b>234</b>	<b>42.1</b>	233	42.3
470.lbm	32.0	429	31.8	432	<b>31.8</b>	<b>432</b>	32.0	429	31.8	432	<b>31.8</b>	<b>432</b>
481.wrf	157	71.3	160	69.6	<b>157</b>	<b>70.9</b>	157	71.3	160	69.6	<b>157</b>	<b>70.9</b>
482.sphinx3	282	69.2	<b>282</b>	<b>69.1</b>	284	68.6	277	70.4	<b>282</b>	<b>69.1</b>	288	67.8

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 = "16"

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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**Hardware Availability:** Mar-2012  
**Software Availability:** Dec-2011

## 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

## 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  
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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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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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