



# SPEC® CFP2006 Result

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## Supermicro

### SPECfp®\_rate2006 = 228

### SuperServer 5037A-i (X9SRA, Intel Xeon E5-1660)

### SPECfp\_rate\_base2006 = 223

CPU2006 license: 001176

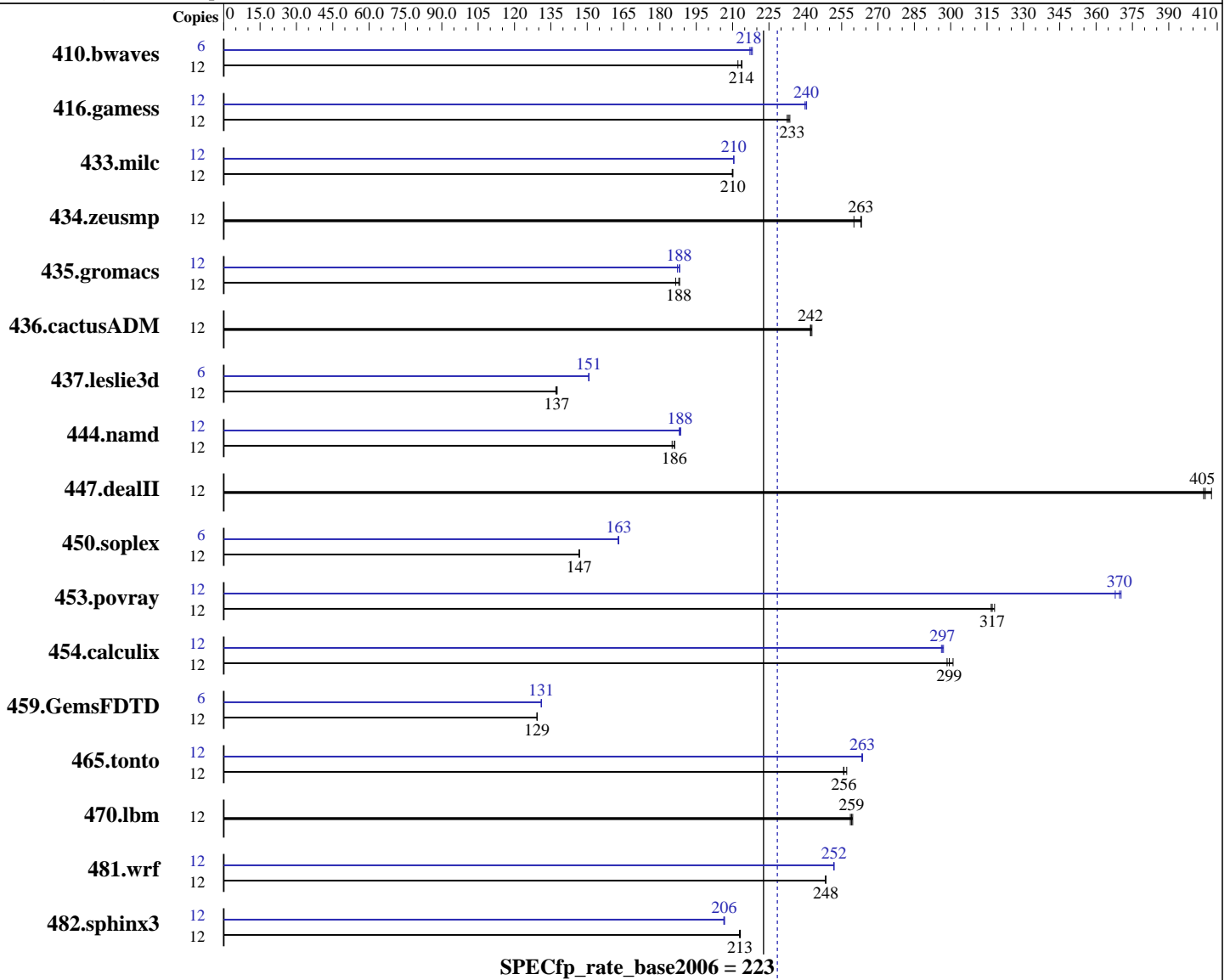
Test date: May-2012

Test sponsor: Supermicro

Hardware Availability: Mar-2012

Tested by: Supermicro

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-1660  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.90 GHz  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 6 cores, 1 chip, 6 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 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 6.2, 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: No  
 File System: ext4  
 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: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
Disk Subsystem: 1 x 300 GB SATA II, 10000 RPM  
Other Hardware: None

Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: None

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	12	763	214	<b><u>763</u></b>	<b><u>214</u></b>	769	212	6	375	217	374	218	<b><u>375</u></b>	<b><u>218</u></b>
416.gamess	12	1010	233	<b><u>1008</u></b>	<b><u>233</u></b>	1006	234	12	<b><u>978</u></b>	<b><u>240</u></b>	980	240	977	241
433.milc	12	524	210	<b><u>524</u></b>	<b><u>210</u></b>	525	210	12	<b><u>523</u></b>	<b><u>210</u></b>	523	210	523	211
434.zeusmp	12	415	263	420	260	<b><u>415</u></b>	<b><u>263</u></b>	12	415	263	420	260	<b><u>415</u></b>	<b><u>263</u></b>
435.gromacs	12	455	188	<b><u>456</u></b>	<b><u>188</u></b>	459	187	12	458	187	455	188	<b><u>456</u></b>	<b><u>188</u></b>
436.cactusADM	12	591	243	592	242	<b><u>592</u></b>	<b><u>242</u></b>	12	591	243	592	242	<b><u>592</u></b>	<b><u>242</u></b>
437.leslie3d	12	<b><u>821</u></b>	<b><u>137</u></b>	820	138	823	137	6	374	151	374	151	<b><u>374</u></b>	<b><u>151</u></b>
444.namd	12	520	185	517	186	<b><u>517</u></b>	<b><u>186</u></b>	12	<b><u>511</u></b>	<b><u>188</u></b>	512	188	510	189
447.dealII	12	339	404	<b><u>339</u></b>	<b><u>405</u></b>	337	408	12	339	404	<b><u>339</u></b>	<b><u>405</u></b>	337	408
450.soplex	12	682	147	682	147	<b><u>682</u></b>	<b><u>147</u></b>	6	307	163	<b><u>307</u></b>	<b><u>163</u></b>	308	163
453.povray	12	<b><u>201</u></b>	<b><u>317</u></b>	201	318	202	317	12	<b><u>173</u></b>	<b><u>370</u></b>	172	370	174	368
454.calculix	12	332	299	329	301	<b><u>331</u></b>	<b><u>299</u></b>	12	<b><u>334</u></b>	<b><u>297</u></b>	333	297	334	296
459.GemsFDTD	12	985	129	<b><u>985</u></b>	<b><u>129</u></b>	985	129	6	486	131	<b><u>486</u></b>	<b><u>131</u></b>	485	131
465.tonto	12	<b><u>461</u></b>	<b><u>256</u></b>	462	256	459	257	12	448	264	448	263	<b><u>448</u></b>	<b><u>263</u></b>
470.lbm	12	635	260	<b><u>636</u></b>	<b><u>259</u></b>	638	259	12	635	260	<b><u>636</u></b>	<b><u>259</u></b>	638	259
481.wrf	12	<b><u>539</u></b>	<b><u>248</u></b>	540	248	539	248	12	532	252	<b><u>532</u></b>	<b><u>252</u></b>	533	252
482.sphinx3	12	<b><u>1098</u></b>	<b><u>213</u></b>	1099	213	1097	213	12	1133	206	1131	207	<b><u>1133</u></b>	<b><u>206</u></b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## 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:  
LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"

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**Tested by:** Supermicro

**Test date:** May-2012  
**Hardware Availability:** Mar-2012  
**Software Availability:** Dec-2011

## General Notes (Continued)

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RHEL5.5  
Transparent Huge Pages disabled with:  
echo never > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## 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 -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

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## Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32  
-ansi-alias -opt-mem-layout-trans=3

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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  
453.povray: -DSPEC\_CPU\_LP64  
454.calculix: -DSPEC\_CPU\_LP64 -nofor\_main  
465.tonto: -DSPEC\_CPU\_LP64  
470.lbm: -DSPEC\_CPU\_LP64  
481.wrf: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_CASE\_FLAG -DSPEC\_CPU\_LINUX



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Software Availability: Dec-2011

## 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  
-opt-mem-layout-trans=3

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

### 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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static

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

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

### Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch  
-static -auto-ilp32 -opt-mem-layout-trans=3

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## Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -static -auto-ilp32  
-opt-mem-layout-trans=3

481.wrf: Same as 454.calculix

The flags files that were used to format this result can be browsed at

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

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.html>

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

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

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.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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