



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

SuperServer 6072R-73DARF (X9DRD-7LN4F, Intel Xeon E5-2650L)

SPECfp<sup>®</sup>2006 = **62.4**

SPECfp\_base2006 = **58.8**

CPU2006 license: 001176

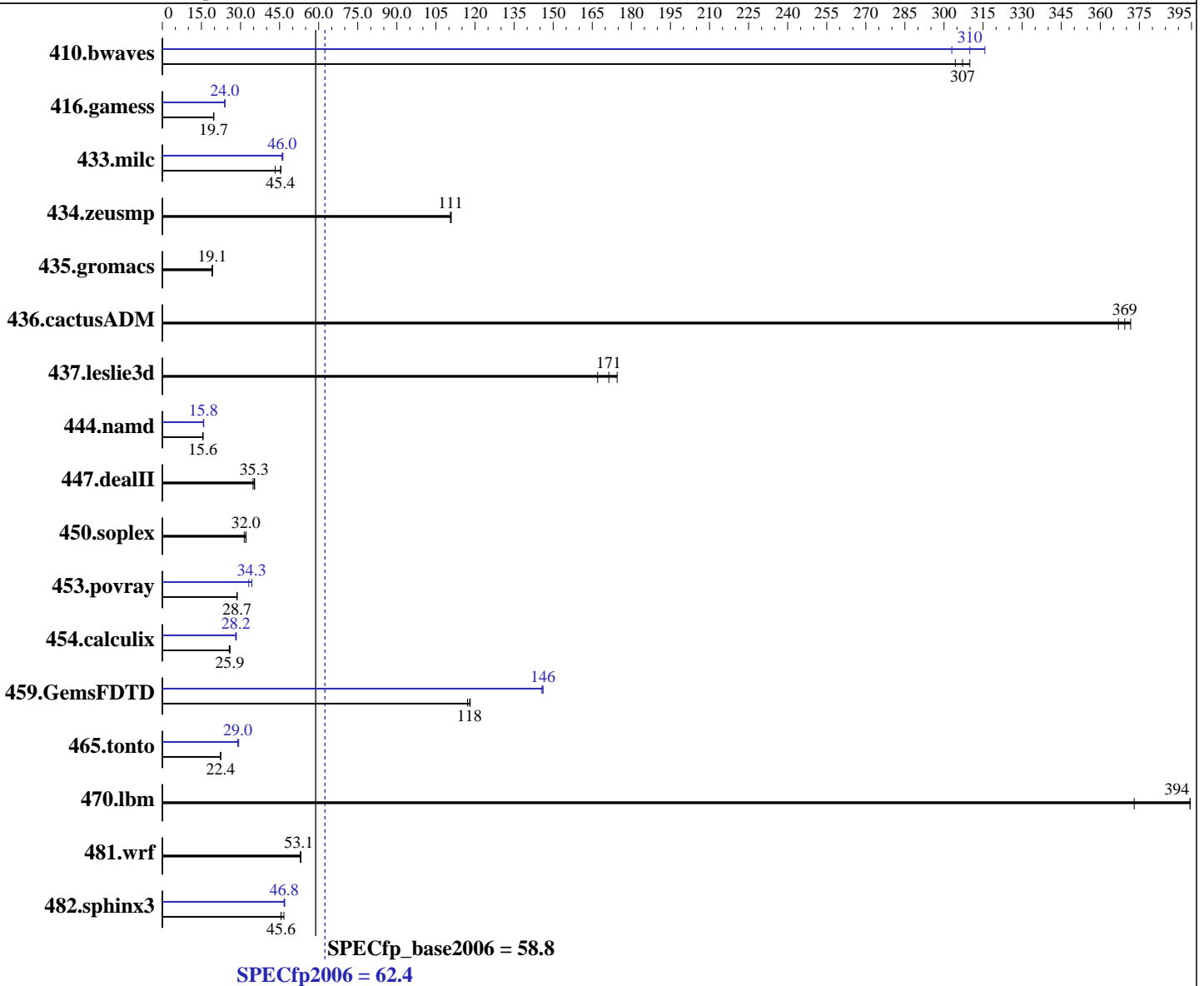
Test sponsor: Supermicro

Tested by: Supermicro

Test date: May-2012

Hardware Availability: Mar-2012

Software Availability: Dec-2011



**Hardware**

CPU Name: Intel Xeon E5-2650L  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.30 GHz  
 CPU MHz: 1800  
 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: 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: 64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)  
Disk Subsystem: 1 x 750 GB SATA III, 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	44.7	304	<b>44.2</b>	<b>307</b>	43.9	310	44.9	303	43.0	316	<b>43.9</b>	<b>310</b>
416.gamess	994	19.7	993	19.7	<b>993</b>	<b>19.7</b>	818	23.9	<b>816</b>	<b>24.0</b>	814	24.1
433.milc	212	43.3	<b>202</b>	<b>45.4</b>	202	45.5	<b>199</b>	<b>46.0</b>	198	46.3	199	46.0
434.zeusmp	82.3	111	82.1	111	<b>82.3</b>	<b>111</b>	82.3	111	82.1	111	<b>82.3</b>	<b>111</b>
435.gromacs	371	19.3	374	19.1	<b>373</b>	<b>19.1</b>	371	19.3	374	19.1	<b>373</b>	<b>19.1</b>
436.cactusADM	32.2	372	<b>32.4</b>	<b>369</b>	32.6	367	32.2	372	<b>32.4</b>	<b>369</b>	32.6	367
437.leslie3d	<b>54.9</b>	<b>171</b>	56.3	167	53.9	175	<b>54.9</b>	<b>171</b>	56.3	167	53.9	175
444.namd	513	15.6	518	15.5	<b>515</b>	<b>15.6</b>	509	15.8	505	15.9	<b>509</b>	<b>15.8</b>
447.dealII	<b>324</b>	<b>35.3</b>	329	34.8	323	35.4	<b>324</b>	<b>35.3</b>	329	34.8	323	35.4
450.soplex	265	31.4	<b>260</b>	<b>32.0</b>	260	32.1	265	31.4	<b>260</b>	<b>32.0</b>	260	32.1
453.povray	<b>186</b>	<b>28.7</b>	185	28.7	186	28.6	155	34.4	<b>155</b>	<b>34.3</b>	160	33.2
454.calculix	321	25.7	<b>319</b>	<b>25.9</b>	318	26.0	290	28.4	<b>292</b>	<b>28.2</b>	293	28.2
459.GemsFDTD	89.8	118	<b>90.0</b>	<b>118</b>	90.6	117	72.6	146	72.8	146	<b>72.6</b>	<b>146</b>
465.tonto	439	22.4	442	22.3	<b>440</b>	<b>22.4</b>	336	29.3	<b>340</b>	<b>29.0</b>	340	28.9
470.lbm	<b>34.8</b>	<b>394</b>	36.8	373	34.8	394	<b>34.8</b>	<b>394</b>	36.8	373	34.8	394
481.wrf	211	52.9	210	53.2	<b>210</b>	<b>53.1</b>	211	52.9	210	53.2	<b>210</b>	<b>53.1</b>
482.sphinx3	428	45.5	<b>427</b>	<b>45.6</b>	418	46.7	415	47.0	<b>417</b>	<b>46.8</b>	417	46.7

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"  
Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled

## 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



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CPU2006 license: 001176  
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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.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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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