



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

(Test Sponsor: Intel Corporation)

Supermicro X7DB8+ (Intel Xeon processor E5430,  
2.66 GHz)

SPECfp<sup>®</sup>\_rate2006 = 73.5

SPECfp\_rate\_base2006 = 66.4

CPU2006 license: 13

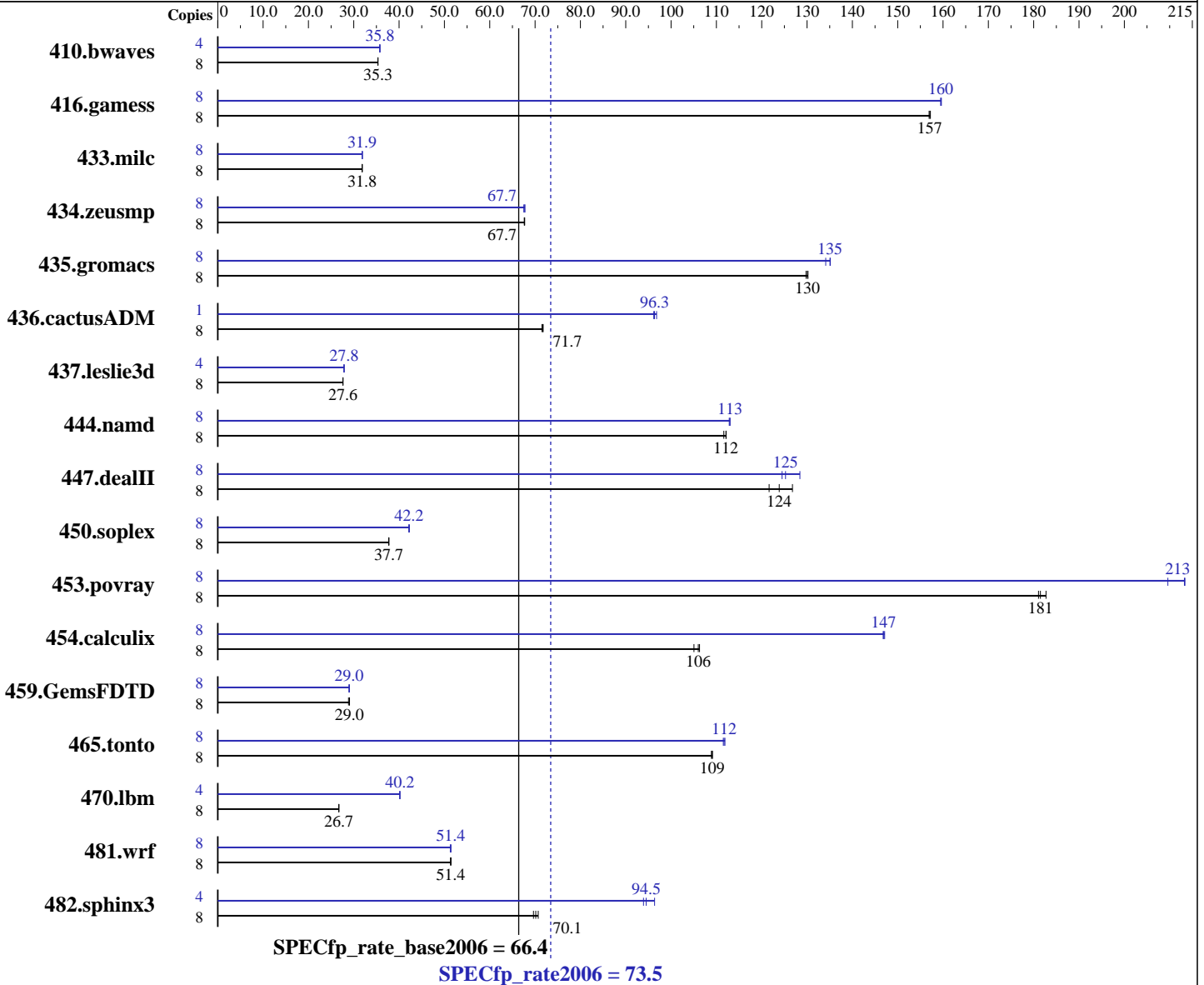
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Nov-2007

Hardware Availability: Nov-2007

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5430  
 CPU Characteristics: Quad Core, 2.66 GHz  
 CPU MHz: 2666  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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### Software

Operating System: 64-Bit SUSE LINUX Enterprise Server 10 SP1 RC1, Kernel linux-cbmg 2.6.16.43-0.5-smp for x86\_64  
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008, l\_fc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, run level 3

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8 \* 2GB DDR2 5300F, 2 rank,  
CL5-5-5, ECC)  
Disk Subsystem: 1x73GB Seagate ST37330LC SCSI 10K RPM  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: Binutils 2.17.50.0.15

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	<b>3077</b>	<b>35.3</b>	3078	35.3	3076	35.3	4	1521	35.7	<b>1520</b>	<b>35.8</b>	1519	35.8
416.gamess	8	996	157	<b>997</b>	<b>157</b>	998	157	8	<b>982</b>	<b>160</b>	981	160	982	160
433.milc	8	<b>2306</b>	<b>31.8</b>	2303	31.9	2308	31.8	8	2306	31.8	2301	31.9	<b>2305</b>	<b>31.9</b>
434.zeusmp	8	1075	67.7	1077	67.6	<b>1076</b>	<b>67.7</b>	8	<b>1075</b>	<b>67.7</b>	1075	67.7	1078	67.5
435.gromacs	8	<b>439</b>	<b>130</b>	439	130	440	130	8	426	134	423	135	<b>423</b>	<b>135</b>
436.cactusADM	8	1332	71.8	1337	71.5	<b>1333</b>	<b>71.7</b>	1	<b>124</b>	<b>96.3</b>	124	96.2	123	96.8
437.leslie3d	8	2724	27.6	2722	27.6	<b>2724</b>	<b>27.6</b>	4	1348	27.9	1351	27.8	<b>1350</b>	<b>27.8</b>
444.namd	8	572	112	575	112	<b>572</b>	<b>112</b>	8	568	113	569	113	<b>568</b>	<b>113</b>
447.dealII	8	752	122	<b>739</b>	<b>124</b>	722	127	8	713	128	735	124	<b>731</b>	<b>125</b>
450.soplex	8	1766	37.8	<b>1769</b>	<b>37.7</b>	1770	37.7	8	1583	42.2	<b>1581</b>	<b>42.2</b>	1579	42.3
453.povray	8	<b>235</b>	<b>181</b>	235	181	233	183	8	199	213	203	210	<b>200</b>	<b>213</b>
454.calculix	8	621	106	<b>623</b>	<b>106</b>	628	105	8	<b>449</b>	<b>147</b>	450	147	449	147
459.GemsFDTD	8	<b>2925</b>	<b>29.0</b>	2920	29.1	2943	28.8	8	<b>2928</b>	<b>29.0</b>	2930	29.0	2925	29.0
465.tonto	8	721	109	<b>722</b>	<b>109</b>	723	109	8	706	112	<b>705</b>	<b>112</b>	704	112
470.lbm	8	4117	26.7	<b>4116</b>	<b>26.7</b>	4115	26.7	4	<b>1368</b>	<b>40.2</b>	1368	40.2	1369	40.1
481.wrf	8	1738	51.4	<b>1739</b>	<b>51.4</b>	1740	51.4	8	<b>1738</b>	<b>51.4</b>	1742	51.3	1738	51.4
482.sphinx3	8	2206	70.7	<b>2223</b>	<b>70.1</b>	2239	69.6	4	<b>825</b>	<b>94.5</b>	809	96.4	830	93.9

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

## General Notes

Bios settings:

Hardware Prefetcher: Disabled

Adjacent Sector Prefetch: Disabled

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex

470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode

The taskset utility was used to bind processes to cores

## Base Compiler Invocation

C benchmarks:  
icc

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Software Availability: Nov-2007

## Base Compiler Invocation (Continued)

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icc ifort

## 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:  
-fast

C++ benchmarks:  
-fast

Fortran benchmarks:  
-fast

Benchmarks using both Fortran and C:  
-fast



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Software Availability: Nov-2007

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib  
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib  
-I/opt/intel/fc/10.1.008/include
```

Benchmarks using both Fortran and C:

icc ifort

## 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  
444.namd: -DSPEC_CPU_LP64  
447.deallI: -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  
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
```

## Peak Optimization Flags

C benchmarks:

```
433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-scalar-rep- -prefetch -opt-malloc-options=3
```

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## Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast  
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4  
-ansi-alias

### Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.06.html>



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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.06.xml>

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