



SPEC[®] CFP2006 Result

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Intel Corporation

SPECfp[®]_rate2006 = 98.8

Supermicro X8DAI (Intel Xeon W3570, 3.2 GHz)

SPECfp_rate_base2006 = 95.7

CPU2006 license: 13

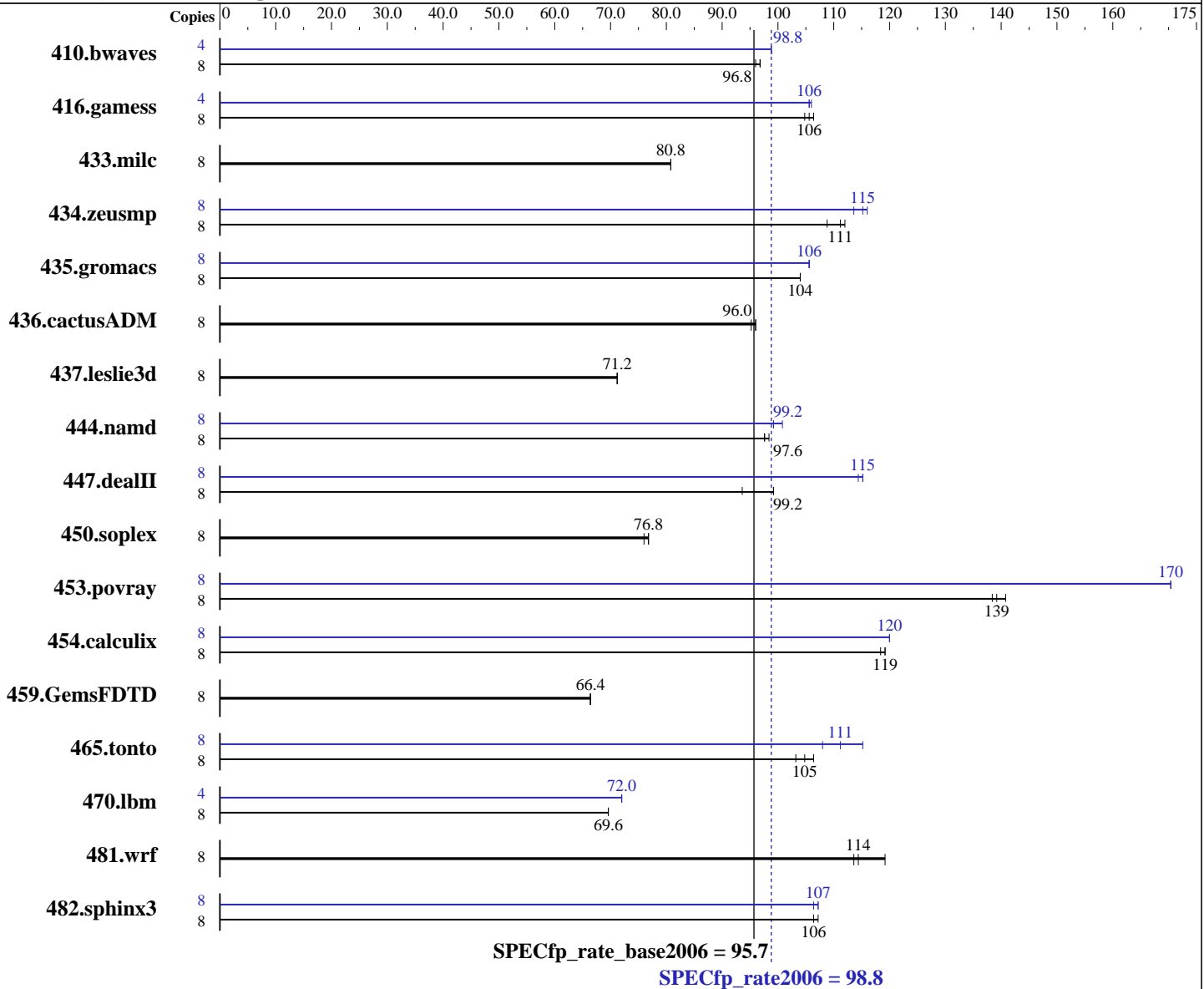
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Mar-2009

Hardware Availability: Mar-2009

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon W3570
 CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
 CPU MHz: 3200
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 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: Windows* XP* Professional x64 Edition SP2 Build 3790
 Compiler: Intel C++ Compiler Professional 11.0 for Intel 64 Build 20090131 Package ID: w_cproc_p_11.0.072
 Intel Visual Fortran Compiler Professional 11.0 for Intel 64 Build 20090131 Package ID: w_cprof_p_11.0.072
 Microsoft Visual Studio 2008 Professional SP1 (for libraries)
 Auto Parallel: No

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L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 12 GB (3 x 4GB DDR3-1333 CL9, IMHH4GP12A1F1C-13H T2)
 Disk Subsystem: Western Digital Raptor WD740, 10k rpm, 74GB SATA
 Other Hardware: None

File System: NTFS
 System State: Default
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: SmartHeap Library Version 8.1 from <http://www.microquill.com/>

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	1130	96.0	<u>1128</u>	<u>96.8</u>	1128	96.8	4	<u>551</u>	<u>98.8</u>	551	98.8	551	98.8		
416.gamess	8	1473	106	<u>1486</u>	<u>106</u>	1493	105	4	741	106	<u>740</u>	<u>106</u>	740	106		
433.milc	8	<u>913</u>	<u>80.8</u>	913	80.8	913	80.8	8	<u>913</u>	<u>80.8</u>	913	80.8	913	80.8		
434.zeusmp	8	<u>654</u>	<u>111</u>	667	109	649	112	8	629	116	<u>634</u>	<u>115</u>	641	114		
435.gromacs	8	550	104	548	104	<u>548</u>	<u>104</u>	8	<u>541</u>	<u>106</u>	541	106	540	106		
436.cactusADM	8	1000	95.2	997	96.0	<u>998</u>	<u>96.0</u>	8	1000	95.2	997	96.0	<u>998</u>	<u>96.0</u>		
437.leslie3d	8	1058	71.2	<u>1057</u>	<u>71.2</u>	1056	71.2	8	1058	71.2	<u>1057</u>	<u>71.2</u>	1056	71.2		
444.namd	8	650	98.4	658	97.6	<u>655</u>	<u>97.6</u>	8	639	101	648	99.2	<u>646</u>	<u>99.2</u>		
447.dealII	8	920	99.2	<u>924</u>	<u>99.2</u>	979	93.6	8	799	114	796	115	<u>796</u>	<u>115</u>		
450.soplex	8	875	76.0	<u>872</u>	<u>76.8</u>	871	76.8	8	875	76.0	<u>872</u>	<u>76.8</u>	871	76.8		
453.povray	8	<u>306</u>	<u>139</u>	307	138	303	141	8	250	170	250	170	<u>250</u>	<u>170</u>		
454.calculix	8	556	118	<u>555</u>	<u>119</u>	555	119	8	550	120	551	120	<u>551</u>	<u>120</u>		
459.GemsFDTD	8	1277	66.4	<u>1278</u>	<u>66.4</u>	1279	66.4	8	1277	66.4	<u>1278</u>	<u>66.4</u>	1279	66.4		
465.tonto	8	<u>751</u>	<u>105</u>	761	103	738	106	8	684	115	728	108	<u>710</u>	<u>111</u>		
470.lbm	8	1573	69.6	<u>1572</u>	<u>69.6</u>	1572	69.6	4	764	72.0	<u>764</u>	<u>72.0</u>	764	72.0		
481.wrf	8	752	119	<u>783</u>	<u>114</u>	787	114	8	752	119	<u>783</u>	<u>114</u>	787	114		
482.sphinx3	8	1469	106	1458	107	<u>1462</u>	<u>106</u>	8	1468	106	1455	107	<u>1455</u>	<u>107</u>		

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

Submit Notes

The config file option 'submit' was used.
the start command with /affinity was used to bind copies to cores

General Notes

System can be built with an extended ATX case like SuperChassis 743TQ-865B-SQ and an 885W power supply.



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Base Compiler Invocation

C benchmarks:

icl -Qvc9 -Qstd=c99

C++ benchmarks:

icl -Qvc9

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc9 -Qstd=c99 ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_P64 /Qlowercase
 416.gamess: -DSPEC_CPU_P64
 433.milc: -DSPEC_CPU_P64
 434.zeusmp: -DSPEC_CPU_P64
 435.gromacs: -DSPEC_CPU_P64
 436.cactusADM: -DSPEC_CPU_P64 -Qlowercase /assume:underscore
 437.leslie3d: -DSPEC_CPU_P64
 444.namd: -DSPEC_CPU_P64 /TP
 447.dealII: -DSPEC_CPU_P64 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
 450.soplex: -DSPEC_CPU_P64
 453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
 454.calculix: -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -Qlowercase
 459.GemsFDTD: -DSPEC_CPU_P64
 465.tonto: -DSPEC_CPU_P64
 470.lbm: -DSPEC_CPU_P64
 481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
 482.sphinx3: -DSPEC_CPU_P64

Base Optimization Flags

C benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000

C++ benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlw64Mt.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32
/F1000000000
```

Peak Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:

```
icl -Qvc9
```

Fortran benchmarks:

```
ifort
```

Benchmarks using both Fortran and C:

```
icl -Qvc9 -Qstd=c99 ifort
```

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
433.milc: basepeak = yes
```

```
470.lbm: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch
-Qauto-ilp32 /F1000000000
```

```
482.sphinx3: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qunroll2 -Qauto-ilp32
/F1000000000
```

C++ benchmarks:

```
444.namd: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000
shlW64Mt.lib -link /FORCE:MULTIPLE
```

```
447.dealII: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias
-Qscalar-rep- -Qauto-ilp32 /F1000000000 shlW64Mt.lib
-link /FORCE:MULTIPLE
```

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Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

453.povray: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32
/F1000000000 sh1W64Mt.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F1000000000

416.gamess: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias
-Qscalar-rep- /F1000000000

434.zeusmp: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- /F1000000000

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000

Benchmarks using both Fortran and C:

435.gromacs: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32
/F1000000000

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qauto-ilp32 /F1000000000

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-winx64-revA.html>

<http://www.spec.org/cpu2006/flags/Intel-Winx64-Platform.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-winx64-revA.xml>

<http://www.spec.org/cpu2006/flags/Intel-Winx64-Platform.xml>



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