



# SPEC® CFP2006 Result

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Itaotec

SPECfp®\_rate2006 = 83.9

Servidor Itaotec MX223 (Intel Xeon E5520)

SPECfp\_rate\_base2006 = 81.8

CPU2006 license: 9001

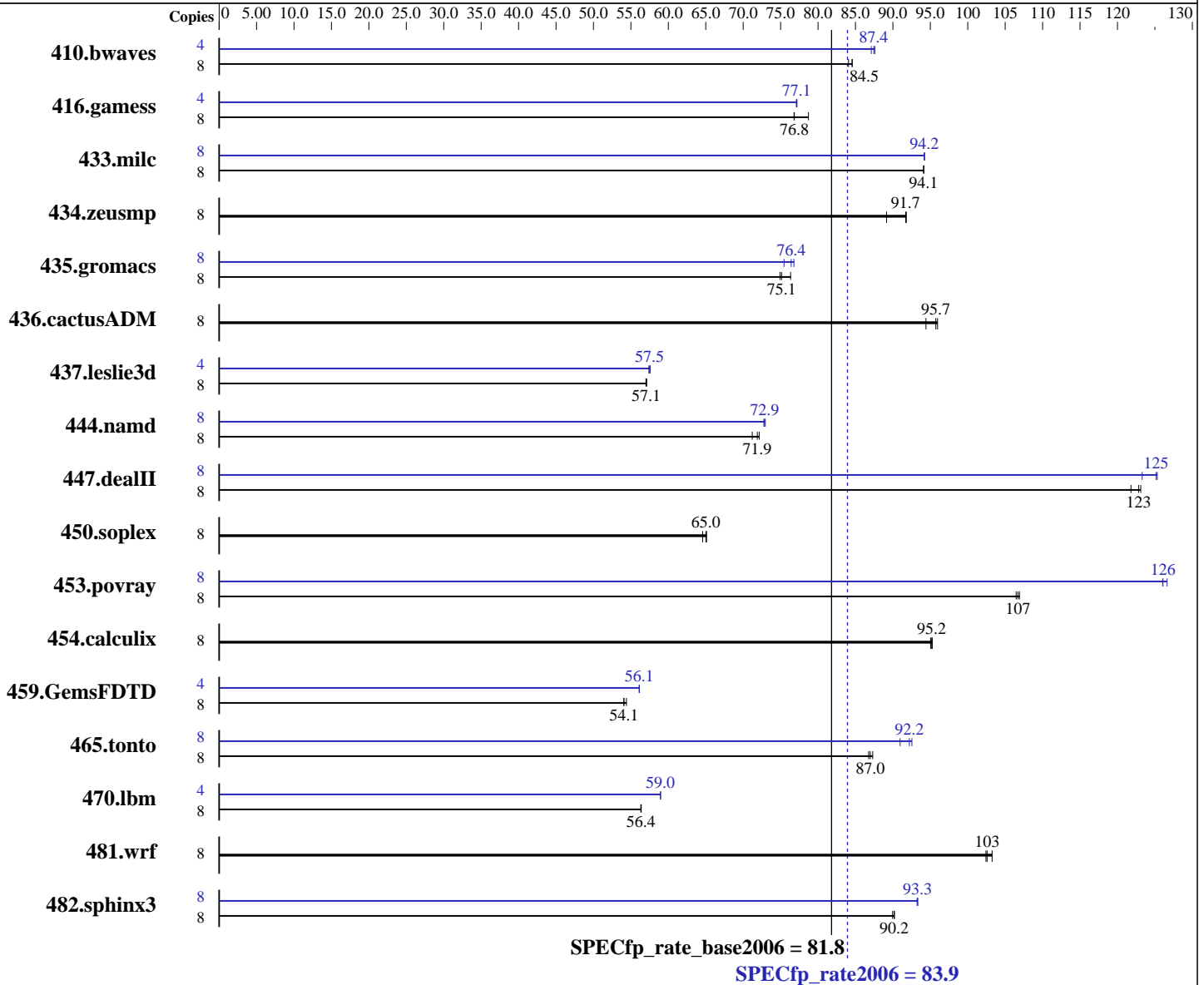
Test sponsor: Itaotec

Tested by: Itaotec

Test date: Dec-2009

Hardware Availability: Mar-2009

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon E5520  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz  
 CPU MHz: 2267  
 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: SUSE Linux Enterprise Server 10 (x86\_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.081, l\_cprof\_p\_11.0.081  
 Auto Parallel: No  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 12 GB (3 x 4GB DDR3-1066, CL 7, ECC)  
Disk Subsystem: 1 x 160 GB SATA-2, 7200RPM  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1286	84.6	<u>1286</u>	<u>84.5</u>	1293	84.1	4	624	87.1	621	87.6	<u>622</u>	<u>87.4</u>
416.gamess	8	<u>2039</u>	<u>76.8</u>	2040	76.8	1990	78.7	4	1016	77.1	1015	77.2	<u>1015</u>	<u>77.1</u>
433.milc	8	<u>780</u>	<u>94.1</u>	780	94.1	780	94.1	8	779	94.2	780	94.2	<u>780</u>	<u>94.2</u>
434.zeusmp	8	<u>794</u>	<u>91.7</u>	793	91.8	817	89.2	8	<u>794</u>	<u>91.7</u>	793	91.8	817	89.2
435.gromacs	8	748	76.3	762	74.9	<u>760</u>	<u>75.1</u>	8	<u>748</u>	<u>76.4</u>	744	76.8	757	75.5
436.cactusADM	8	1013	94.4	996	96.0	<u>999</u>	<u>95.7</u>	8	1013	94.4	996	96.0	<u>999</u>	<u>95.7</u>
437.leslie3d	8	1317	57.1	<u>1318</u>	<u>57.1</u>	1319	57.0	4	655	57.4	653	57.6	<u>654</u>	<u>57.5</u>
444.namd	8	<u>893</u>	<u>71.9</u>	889	72.1	901	71.2	8	879	73.0	<u>881</u>	<u>72.9</u>	882	72.8
447.dealII	8	743	123	<u>745</u>	<u>123</u>	751	122	8	742	123	<u>731</u>	<u>125</u>	730	125
450.soplex	8	1033	64.6	<u>1026</u>	<u>65.0</u>	1025	65.1	8	1033	64.6	<u>1026</u>	<u>65.0</u>	1025	65.1
453.povray	8	398	107	400	106	<u>399</u>	<u>107</u>	8	<u>338</u>	<u>126</u>	338	126	336	127
454.calculix	8	694	95.0	693	95.3	<u>693</u>	<u>95.2</u>	8	694	95.0	693	95.3	<u>693</u>	<u>95.2</u>
459.GemsFDTD	8	1560	54.4	1570	54.1	<u>1570</u>	<u>54.1</u>	4	756	56.1	<u>756</u>	<u>56.1</u>	756	56.1
465.tonto	8	907	86.8	902	87.3	<u>905</u>	<u>87.0</u>	8	865	91.0	<u>854</u>	<u>92.2</u>	851	92.5
470.lbm	8	1949	56.4	<u>1951</u>	<u>56.4</u>	1951	56.3	4	933	58.9	<u>932</u>	<u>59.0</u>	932	59.0
481.wrf	8	865	103	872	102	<u>871</u>	<u>103</u>	8	865	103	872	102	<u>871</u>	<u>103</u>
482.sphinx3	8	1733	90.0	1729	90.2	<u>1729</u>	<u>90.2</u>	8	<u>1671</u>	<u>93.3</u>	1671	93.3	1672	93.2

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.  
numactl was used to bind copies to the cores

## General Notes

This result was measured on the Servidor Itautec MX223.  
The Servidor Itautec MX223 and the Servidor Itautec MX203 are electronically equivalent.  
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.



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## Base Compiler Invocation

C benchmarks:  
icc

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:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

C++ benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:  
-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:  
-xSSE4.2 -ipo -O3 -no-prec-div -static



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: icc -m32

C++ benchmarks:

icpc

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: ifort -m32

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.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

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-fno-alias

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32

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## Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias -scalar-rep-

450.soplex: basepeak = yes

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -opt-prefetch

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

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## Peak Optimization Flags (Continued)

481.wrf: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Itautec-Intel-ic11.0-fp-linux64-revI.html>

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

<http://www.spec.org/cpu2006/flags/Itautec-Intel-ic11.0-fp-linux64-revI.xml>

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

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