



# SPEC<sup>®</sup> CFP2006 Result

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Itaotec

SPECfp<sup>®</sup>\_rate2006 = 104

Servidor Itaotec MX223 (Intel Xeon X5570)

SPECfp\_rate\_base2006 = 101

CPU2006 license: 9001

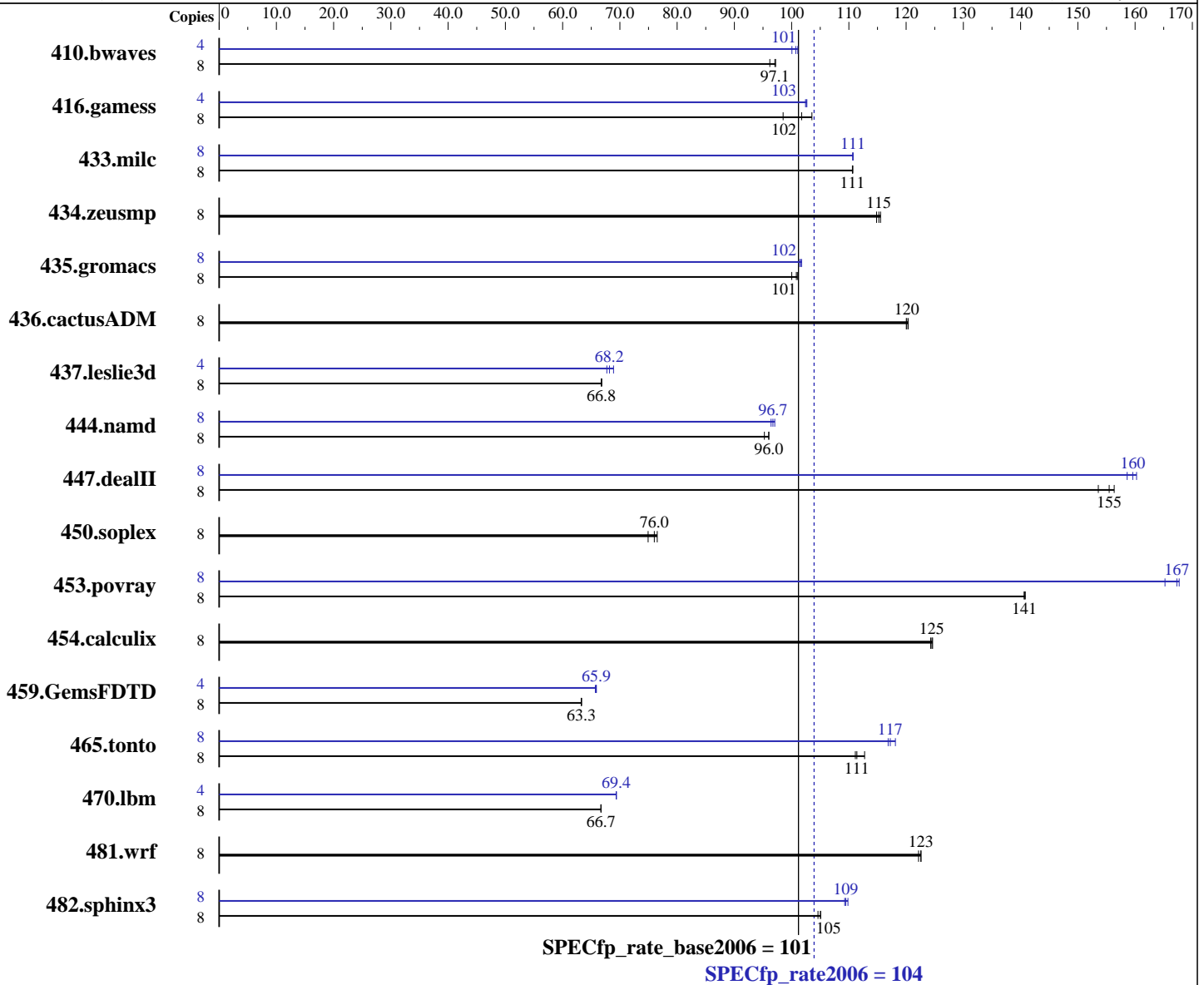
Test date: Dec-2009

Test sponsor: Itaotec

Hardware Availability: Mar-2009

Tested by: Itaotec

Software Availability: May-2009



### Hardware

CPU Name: Intel Xeon X5570  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz  
 CPU MHz: 2930  
 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 DDR3-1333, CL 9, 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	1130	96.2	1118	97.2	<u>1120</u>	<u>97.1</u>	4	543	100	538	101	<u>540</u>	<u>101</u>
416.gamess	8	1513	104	1590	98.5	<u>1539</u>	<u>102</u>	4	<u>764</u>	<u>103</u>	765	102	763	103
433.milc	8	663	111	<u>664</u>	<u>111</u>	664	111	8	664	111	<u>663</u>	<u>111</u>	663	111
434.zeusmp	8	630	116	<u>632</u>	<u>115</u>	634	115	8	630	116	<u>632</u>	<u>115</u>	634	115
435.gromacs	8	<u>567</u>	<u>101</u>	571	100	566	101	8	561	102	<u>563</u>	<u>102</u>	563	101
436.cactusADM	8	796	120	<u>796</u>	<u>120</u>	794	120	8	796	120	<u>796</u>	<u>120</u>	794	120
437.leslie3d	8	1125	66.8	1127	66.7	<u>1126</u>	<u>66.8</u>	4	555	67.7	<u>552</u>	<u>68.2</u>	546	68.9
444.namd	8	<u>668</u>	<u>96.0</u>	674	95.2	668	96.0	8	<u>663</u>	<u>96.7</u>	666	96.4	661	97.1
447.dealII	8	596	154	<u>589</u>	<u>155</u>	585	156	8	577	159	571	160	<u>573</u>	<u>160</u>
450.soplex	8	890	74.9	<u>878</u>	<u>76.0</u>	872	76.5	8	890	74.9	<u>878</u>	<u>76.0</u>	872	76.5
453.povray	8	302	141	303	141	<u>303</u>	<u>141</u>	8	258	165	254	168	<u>254</u>	<u>167</u>
454.calculix	8	530	125	<u>530</u>	<u>125</u>	531	124	8	530	125	<u>530</u>	<u>125</u>	531	124
459.GemsFDTD	8	1342	63.2	1341	63.3	<u>1341</u>	<u>63.3</u>	4	<u>644</u>	<u>65.9</u>	646	65.7	644	65.9
465.tonto	8	708	111	698	113	<u>707</u>	<u>111</u>	8	666	118	674	117	<u>671</u>	<u>117</u>
470.lbm	8	<u>1648</u>	<u>66.7</u>	1648	66.7	1648	66.7	4	792	69.4	792	69.4	<u>792</u>	<u>69.4</u>
481.wrf	8	729	123	731	122	<u>729</u>	<u>123</u>	8	729	123	731	122	<u>729</u>	<u>123</u>
482.sphinx3	8	1491	105	<u>1484</u>	<u>105</u>	1484	105	8	1427	109	<u>1425</u>	<u>109</u>	1420	110

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

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.

## General Notes

This result was measured on the Servidor Itautec MX203.  
The Servidor Itautec MX223 and the Servidor Itautec MX203 are electronically equivalent.



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Tested by: Itautec

Test date: Dec-2009  
Hardware Availability: Mar-2009  
Software Availability: May-2009

## 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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