



# SPEC<sup>®</sup> CFP2006 Result

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## Itautec

### SPECfp<sup>®</sup>\_rate2006 = 43.0

### Servidor Itautec MX221 (Intel Xeon X5460)

### SPECfp\_rate\_base2006 = 41.7

CPU2006 license: 9001

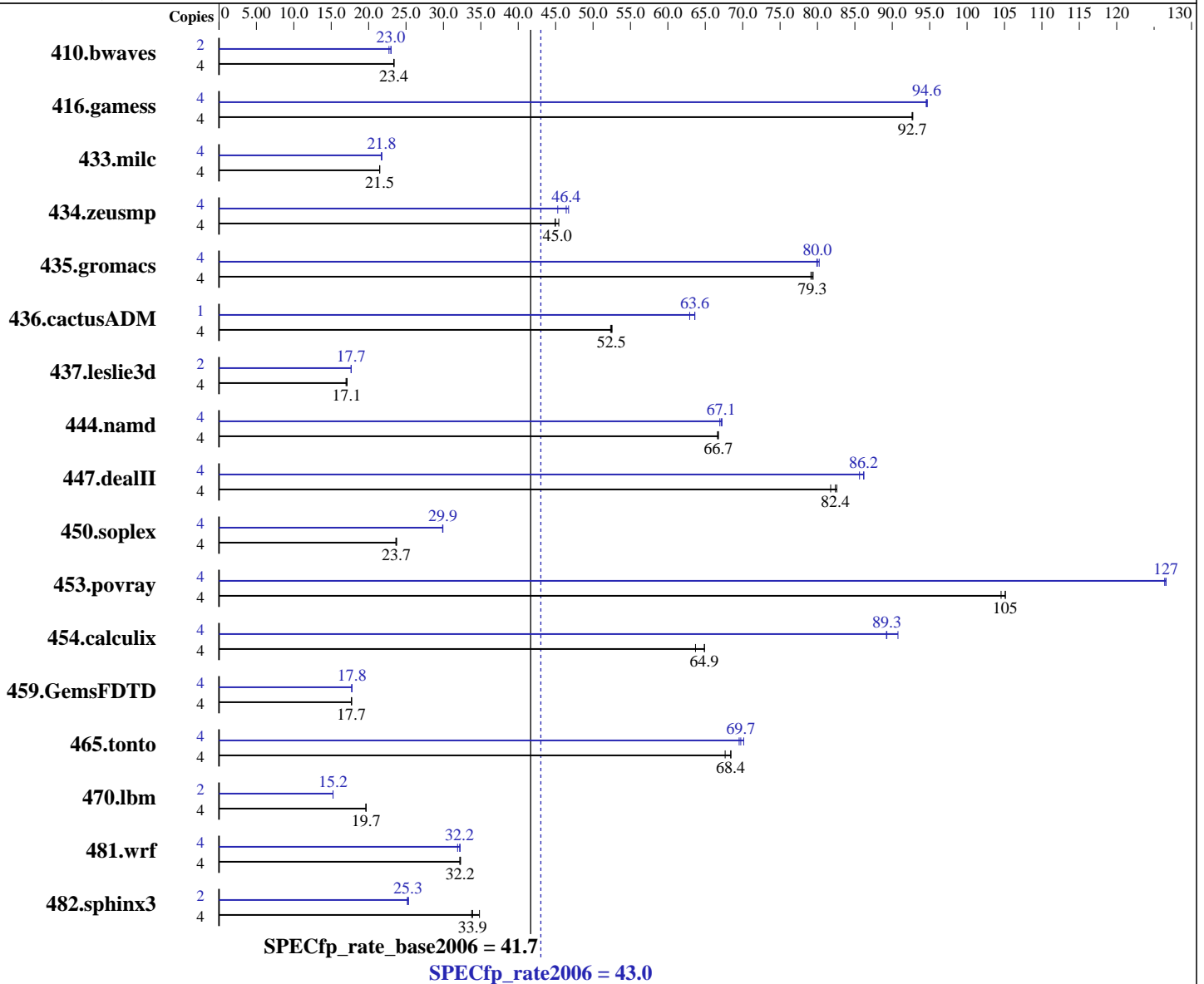
Test date: Mar-2008

Test sponsor: Itautec

Hardware Availability: Dec-2007

Tested by: Itautec

Software Availability: Jan-2008



### Hardware

CPU Name: Intel Xeon X5460  
 CPU Characteristics: 3160  
 CPU MHz: 3160  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 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: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux Build 20080112 Package ID: l\_cc\_p\_10.1.012, l\_fc\_p\_10.1.012  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8 \* 2 GB PC2-5300 FBDIMM, CL-5-5-5, ECC)  
Disk Subsystem: 1 x SCSI, 73GB, 15000 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: Binutils 2.17.10.50

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	2327	23.4	2323	23.4	<b><u>2325</u></b>	<b><u>23.4</u></b>	2	1182	23.0	1196	22.7	<b><u>1183</u></b>	<b><u>23.0</u></b>
416.gamess	4	844	92.7	<b><u>845</u></b>	<b><u>92.7</u></b>	845	92.7	4	829	94.5	<b><u>828</u></b>	<b><u>94.6</u></b>	827	94.7
433.milc	4	<b><u>1710</u></b>	<b><u>21.5</u></b>	1710	21.5	1709	21.5	4	1692	21.7	<b><u>1688</u></b>	<b><u>21.8</u></b>	1688	21.8
434.zeusmp	4	810	44.9	801	45.4	<b><u>809</u></b>	<b><u>45.0</u></b>	4	<b><u>784</u></b>	<b><u>46.4</u></b>	804	45.3	779	46.7
435.gromacs	4	<b><u>360</u></b>	<b><u>79.3</u></b>	361	79.1	360	79.4	4	356	80.2	<b><u>357</u></b>	<b><u>80.0</u></b>	357	79.9
436.cactusADM	4	<b><u>911</u></b>	<b><u>52.5</u></b>	913	52.3	910	52.5	1	188	63.6	<b><u>188</u></b>	<b><u>63.6</u></b>	190	62.9
437.leslie3d	4	2196	17.1	<b><u>2203</u></b>	<b><u>17.1</u></b>	2215	17.0	2	1064	17.7	<b><u>1064</u></b>	<b><u>17.7</u></b>	1063	17.7
444.namd	4	<b><u>481</u></b>	<b><u>66.7</u></b>	481	66.6	481	66.8	4	<b><u>478</u></b>	<b><u>67.1</u></b>	479	67.0	477	67.2
447.dealII	4	560	81.8	<b><u>555</u></b>	<b><u>82.4</u></b>	554	82.6	4	531	86.2	<b><u>531</u></b>	<b><u>86.2</u></b>	534	85.6
450.soplex	4	<b><u>1408</u></b>	<b><u>23.7</u></b>	1405	23.7	1411	23.6	4	1114	29.9	1116	29.9	<b><u>1115</u></b>	<b><u>29.9</u></b>
453.povray	4	<b><u>202</u></b>	<b><u>105</u></b>	204	105	202	105	4	<b><u>168</u></b>	<b><u>127</u></b>	168	126	168	127
454.calculix	4	509	64.9	518	63.7	<b><u>509</u></b>	<b><u>64.9</u></b>	4	364	90.8	370	89.2	<b><u>370</u></b>	<b><u>89.3</u></b>
459.GemsFDTD	4	<b><u>2396</u></b>	<b><u>17.7</u></b>	2398	17.7	2394	17.7	4	2387	17.8	<b><u>2387</u></b>	<b><u>17.8</u></b>	2394	17.7
465.tonto	4	<b><u>575</u></b>	<b><u>68.4</u></b>	575	68.4	582	67.7	4	561	70.1	<b><u>564</u></b>	<b><u>69.7</u></b>	566	69.5
470.lbm	4	2798	19.6	<b><u>2797</u></b>	<b><u>19.7</u></b>	2796	19.7	2	1803	15.2	<b><u>1803</u></b>	<b><u>15.2</u></b>	1802	15.2
481.wrf	4	<b><u>1386</u></b>	<b><u>32.2</u></b>	1384	32.3	1388	32.2	4	1386	32.2	<b><u>1389</u></b>	<b><u>32.2</u></b>	1401	31.9
482.sphinx3	4	2308	33.8	2239	34.8	<b><u>2300</u></b>	<b><u>33.9</u></b>	2	<b><u>1543</u></b>	<b><u>25.3</u></b>	1548	25.2	1539	25.3

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

## Compiler Invocation Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_STACK\_SIZE set to 64M  
KMP\_AFFINITY set to physical,0

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.  
'/usr/bin/taskset' used to bind benchmark copies to processors.



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CPU2006 license: 9001  
Test sponsor: Itaotec  
Tested by: Itaotec

Test date: Mar-2008  
Hardware Availability: Dec-2007  
Software Availability: Jan-2008

## Platform Notes

BIOS configuration:  
Hardware Prefetch Disabled

## General Notes

This result was measured on the Servidor Itaotec MX201.  
The Servidor Itaotec MX221 and the Servidor Itaotec MX201 are electronically equivalent.

## 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



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## Base Optimization Flags

C benchmarks:  
-fast  
  
C++ benchmarks:  
-fast  
  
Fortran benchmarks:  
-fast  
  
Benchmarks using both Fortran and C:  
-fast

## Peak Compiler Invocation

C benchmarks (except as noted below):  
/opt/intel/cc/10.1.012/bin/icc -L/opt/intel/cc/10.1.012/lib  
-I/opt/intel/cc/10.1.012/include  
  
433.milc: icc  
  
C++ benchmarks (except as noted below):  
icpc  
  
450.soplex: /opt/intel/cc/10.1.012/bin/icpc -L/opt/intel/cc/10.1.012/lib  
-I/opt/intel/cc/10.1.012/include  
  
Fortran benchmarks (except as noted below):  
ifort  
  
437.leslie3d: /opt/intel/fc/10.1.012/bin/ifort -L/opt/intel/fc/10.1.012/lib  
-I/opt/intel/fc/10.1.012/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.dealII: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

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

482.sphinx3: -fast -unroll2

C++ benchmarks:

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

447.dealII: -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

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## Peak Optimization Flags (Continued)

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/Itautec-ic10.1-FP-intel64-linux-flags.html>

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

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

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