



# SPEC® CFP2006 Result

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## Itautec

### SPECfp®\_rate2006 = 75.1

### Servidor Itautec MX221 (Intel Xeon E5440)

### SPECfp\_rate\_base2006 = 67.8

CPU2006 license: 9001

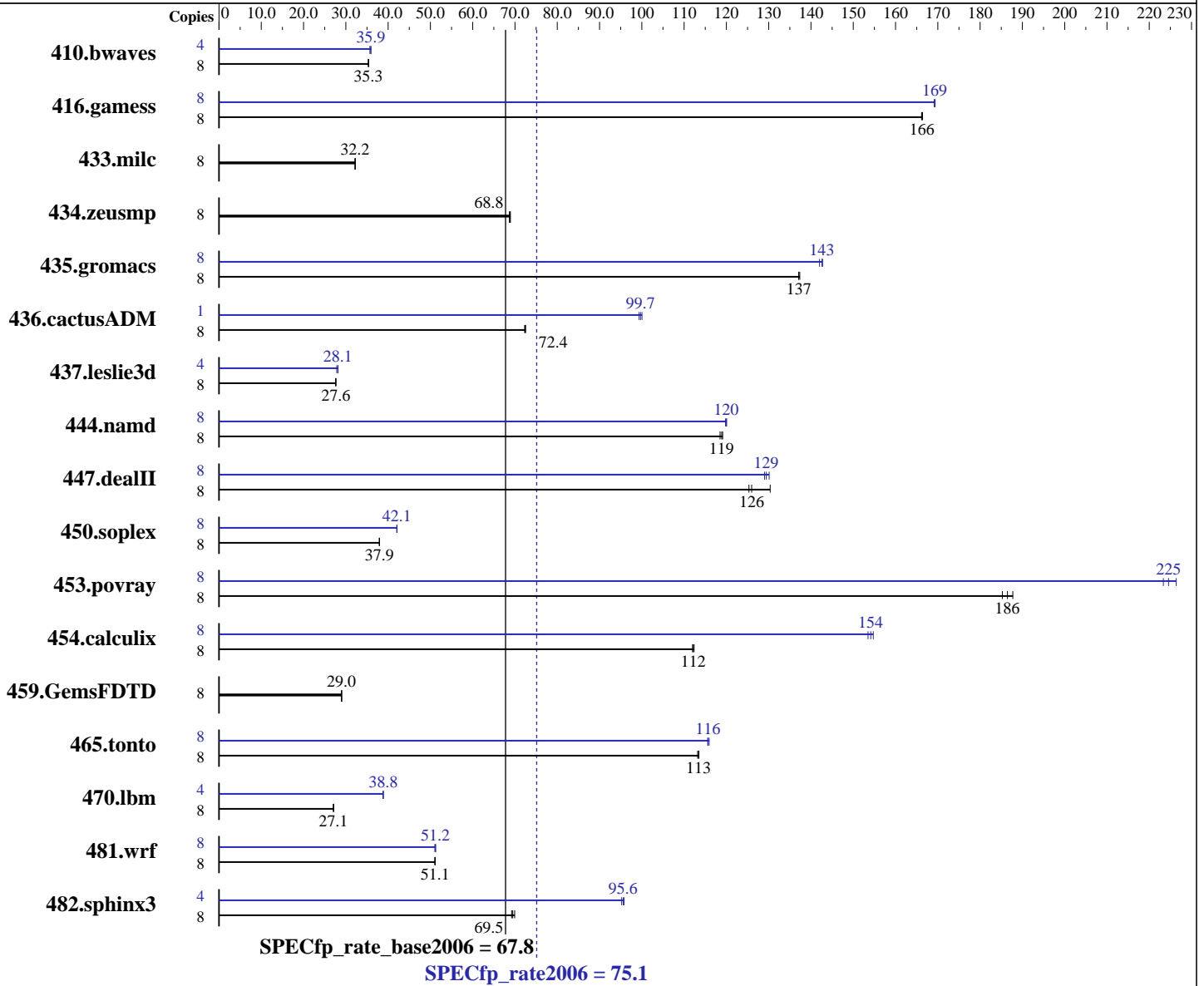
Test date: May-2008

Test sponsor: Itautec

Hardware Availability: Dec-2007

Tested by: Itautec

Software Availability: Jan-2008



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics:  
 CPU MHz: 2830  
 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: SUSE Linux Enterprise Server 10 (x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler for Linux version 10.1  
 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)

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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

Base Pointers: 64-bit  
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	8	3077	35.3	<b>3076</b>	<b>35.3</b>	3075	35.4	4	1523	35.7	1513	35.9	<b>1515</b>	<b>35.9</b>
416.gamess	8	<b>942</b>	<b>166</b>	943	166	941	166	8	926	169	<b>925</b>	<b>169</b>	925	169
433.milc	8	2283	32.2	<b>2282</b>	<b>32.2</b>	2278	32.2	8	2283	32.2	<b>2282</b>	<b>32.2</b>	2278	32.2
434.zeusmp	8	1060	68.7	1056	68.9	<b>1058</b>	<b>68.8</b>	8	1060	68.7	1056	68.9	<b>1058</b>	<b>68.8</b>
435.gromacs	8	416	137	<b>417</b>	<b>137</b>	417	137	8	<b>401</b>	<b>143</b>	400	143	402	142
436.cactusADM	8	1323	72.3	<b>1320</b>	<b>72.4</b>	1318	72.5	1	120	99.3	119	100	<b>120</b>	<b>99.7</b>
437.leslie3d	8	<b>2721</b>	<b>27.6</b>	2721	27.6	2724	27.6	4	1350	27.8	<b>1338</b>	<b>28.1</b>	1336	28.1
444.namd	8	<b>540</b>	<b>119</b>	541	119	539	119	8	536	120	<b>535</b>	<b>120</b>	534	120
447.dealII	8	730	125	702	130	<b>726</b>	<b>126</b>	8	<b>707</b>	<b>129</b>	703	130	709	129
450.soplex	8	<b>1758</b>	<b>37.9</b>	1759	37.9	1758	37.9	8	<b>1586</b>	<b>42.1</b>	1584	42.1	1586	42.1
453.povray	8	227	188	230	185	<b>228</b>	<b>186</b>	8	191	223	188	226	<b>190</b>	<b>225</b>
454.calculix	8	587	112	<b>588</b>	<b>112</b>	589	112	8	<b>428</b>	<b>154</b>	427	155	430	153
459.GemsFDTD	8	2932	29.0	<b>2928</b>	<b>29.0</b>	2924	29.0	8	2932	29.0	<b>2928</b>	<b>29.0</b>	2924	29.0
465.tonto	8	<b>694</b>	<b>113</b>	695	113	694	113	8	681	116	<b>681</b>	<b>116</b>	679	116
470.lbm	8	<b>4060</b>	<b>27.1</b>	4060	27.1	4060	27.1	4	<b>1415</b>	<b>38.8</b>	1414	38.9	1417	38.8
481.wrf	8	1747	51.2	<b>1748</b>	<b>51.1</b>	1751	51.0	8	1750	51.0	1744	51.2	<b>1746</b>	<b>51.2</b>
482.sphinx3	8	2230	69.9	2253	69.2	<b>2244</b>	<b>69.5</b>	4	814	95.8	<b>816</b>	<b>95.6</b>	819	95.2

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' is used to bind benchmark copies to processor, except for 436.cactusADM at peak.



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CPU2006 license: 9001  
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Test date: May-2008  
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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: basepeak = yes  
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: basepeak = yes  
437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-opt-malloc-options=3  
459.GemsFDTD: basepeak = yes  
465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

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## Peak Optimization Flags (Continued)

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.20090714.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.20090714.xml>

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

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