# SPEC® CFP2006 Result

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## Itautec

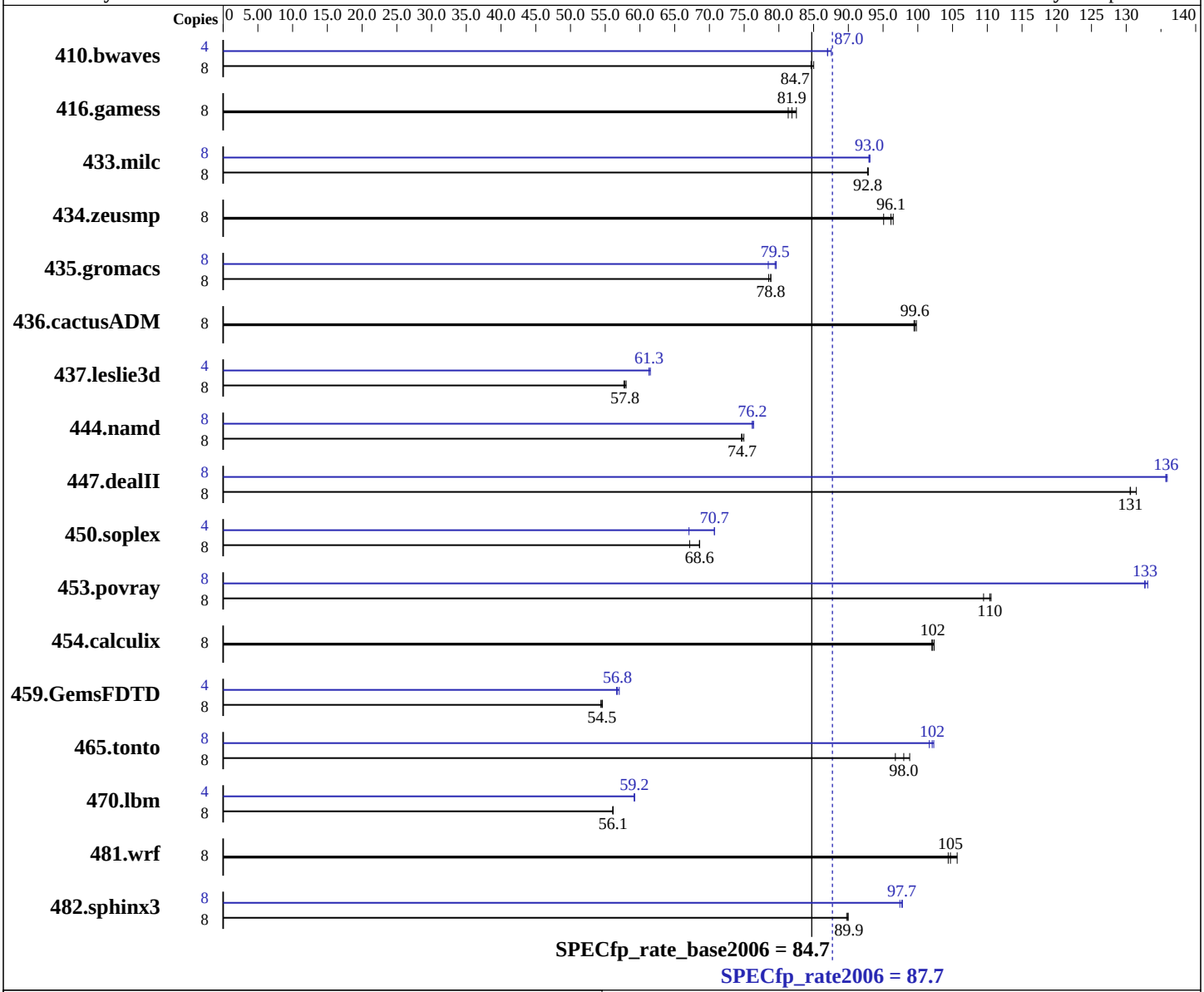
## Servidor Itautec MX223 (Intel Xeon E5620)

SPECfp®_rate2006 = 87.7

SPECfp_rate_base2006 = 84.7

**CPU2006 license:** 9001
**Test sponsor:** Itautec
**Tested by:** Itautec

**Test date:** Jun-2010
**Hardware Availability:** Apr-2010
**Software Availability:** Apr-2010




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5620 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 2.66 GHz |
| CPU MHz: | 2400 |
| 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 11 (x86_64), Kernel 2.6.27.19-5-smp |
| Compiler: | Intel C++ and Fortran Professional Compiler 11.1 for Linux<br>Build 20100414 Package ID: l_cproc_p_11.1.072, l_cprof_p_11.1.072 |
| Auto Parallel: | No |
| File System: | ReiserFS |
| System State: | Run level 3 (multi-user) |

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L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4GB, DDR3-1066, Dual Rank, CL 7, ECC)
Disk Subsystem: 1 x 160 GB SATA-2, 7200 RPM
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

## Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 8 | 1279 | 85.0 | **1283** | **84.7** | 1285 | 84.6 | 4 | 625 | 87.0 | 621 | 87.5 | **625** | **87.0** |
| 416.gamess | 8 | **1913** | **81.9** | 1898 | 82.5 | 1926 | 81.3 | 8 | **1913** | **81.9** | 1898 | 82.5 | 1926 | 81.3 |
| 433.milc | 8 | 792 | 92.8 | 791 | 92.9 | **791** | **92.8** | 8 | **789** | **93.0** | 789 | 93.1 | 790 | 93.0 |
| 434.zeusmp | 8 | **757** | **96.1** | 755 | 96.5 | 766 | 95.1 | 8 | **757** | **96.1** | 755 | 96.5 | 766 | 95.1 |
| 435.gromacs | 8 | 724 | 78.8 | **725** | **78.8** | 727 | 78.5 | 8 | **719** | **79.5** | 728 | 78.5 | 717 | 79.6 |
| 436.cactusADM | 8 | **960** | **99.6** | 958 | 99.8 | 961 | 99.5 | 8 | **960** | **99.6** | 958 | 99.8 | 961 | 99.5 |
| 437.leslie3d | 8 | 1304 | 57.7 | 1296 | 58.0 | **1300** | **57.8** | 4 | 611 | 61.5 | **613** | **61.3** | 613 | 61.3 |
| 444.namd | 8 | **859** | **74.7** | 860 | 74.6 | 856 | 75.0 | 8 | 840 | 76.4 | **842** | **76.2** | 842 | 76.2 |
| 447.dealII | 8 | **701** | **131** | 696 | 131 | 701 | 131 | 8 | 674 | 136 | 673 | 136 | **674** | **136** |
| 450.soplex | 8 | 994 | 67.2 | 973 | 68.6 | **973** | **68.6** | 4 | 497 | 67.1 | **472** | **70.7** | 472 | 70.7 |
| 453.povray | 8 | 385 | 111 | **386** | **110** | 389 | 109 | 8 | **321** | **133** | 320 | 133 | 321 | 133 |
| 454.calculix | 8 | **646** | **102** | 647 | 102 | 645 | 102 | 8 | **646** | **102** | 647 | 102 | 645 | 102 |
| 459.GemsFDTD | 8 | **1557** | **54.5** | 1554 | 54.6 | 1561 | 54.4 | 4 | **748** | **56.8** | 744 | 57.0 | 749 | 56.6 |
| 465.tonto | 8 | **803** | **98.0** | 813 | 96.8 | 797 | 98.8 | 8 | 769 | 102 | **771** | **102** | 774 | 102 |
| 470.lbm | 8 | 1958 | 56.1 | **1959** | **56.1** | 1960 | 56.1 | 4 | 929 | 59.2 | 928 | 59.2 | **928** | **59.2** |
| 481.wrf | 8 | 846 | 106 | 856 | 104 | **854** | **105** | 8 | 846 | 106 | 856 | 104 | **854** | **105** |
| 482.sphinx3 | 8 | 1737 | 89.8 | 1733 | 90.0 | **1734** | **89.9** | 8 | 1600 | 97.4 | **1596** | **97.7** | 1595 | 97.8 |

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 MX223.
The Servidor Itautec MX203 and the Servidor Itautec MX223 are electronically equivalent.
```

## Base Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks:
```
icpc  -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc   -m64 ifort -m64
```

## 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
```

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):
icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

## 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
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -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 -opt-prefetch

470.lbm: -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 -ansi-alias -auto-ilp32

Continued on next page

## 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: -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

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: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

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

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 -inline-calloc -opt-malloc-options=3

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

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-ic11.1-linux64-revE.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Itautec-Intel-ic11.1-linux64-revE.xml


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