# SPEC® CFP2006 Result

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## Itautec

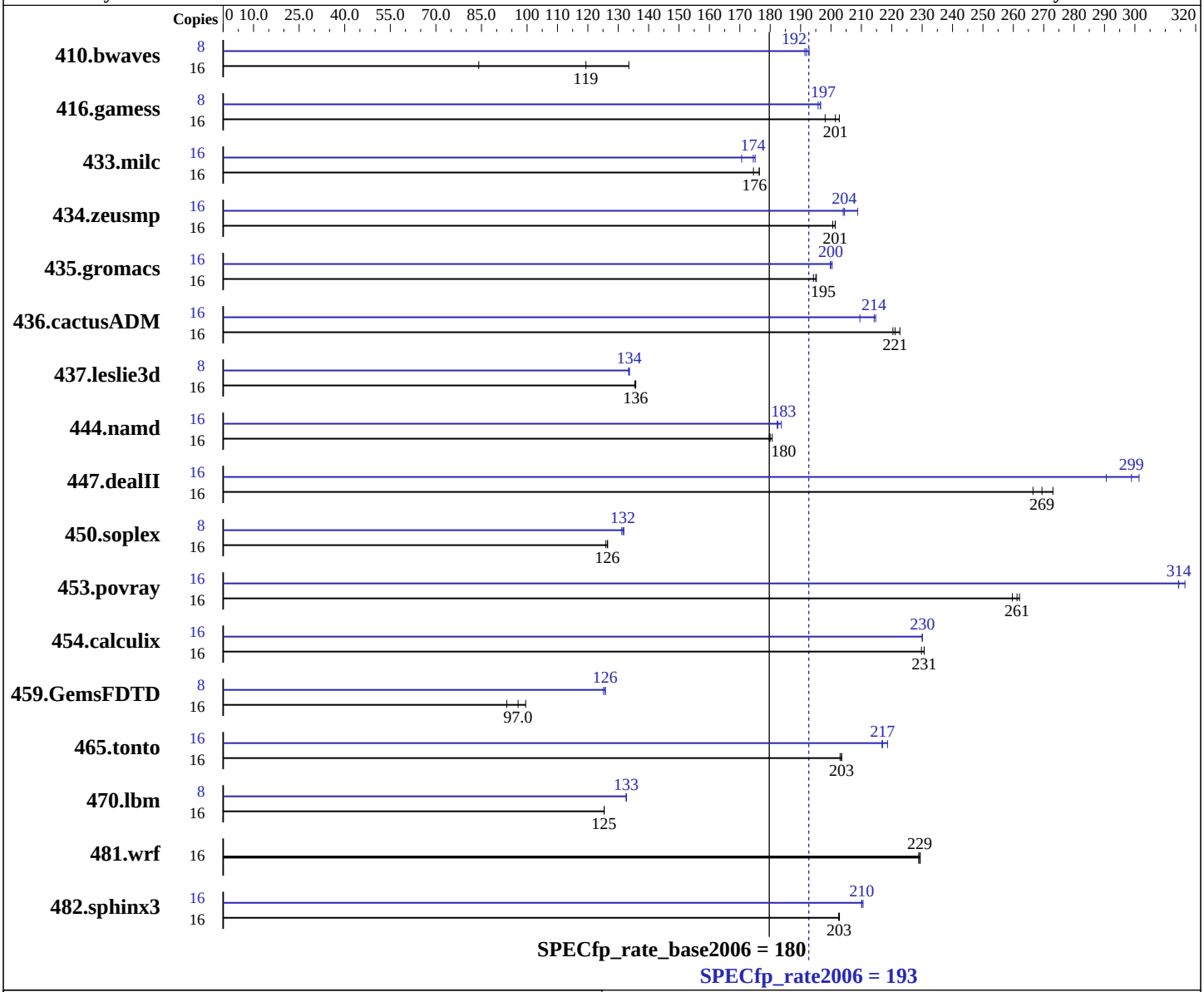
## Servidor Itautec MX203 (Intel Xeon X5560)

**SPECfp®_rate2006 = 193**

**SPECfp_rate_base2006 = 180**

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

**Test date:** Apr-2009
**Hardware Availability:** Mar-2009
**Software Availability:** Feb-2009




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5560 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.20 GHz, 6.4 GT/s QPI |
| CPU MHz: | 2800 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 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 SLES10 SP2, Kernel 2.6.16.60-0.34-smp for x86_64 |
| 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) |
| Base Pointers: | 64-bit |

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4GB DDR3-1333, CL 9, ECC)
Disk Subsystem: 1 x 160 GB SATA-2, 7200RPM
Other Hardware: None

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 | 16 | 2585 | 84.1 | **1822** | **119** | 1629 | 133 | 8 | 564 | 193 | **566** | **192** | 568 | 191 |
| 416.gamess | 16 | **1555** | **201** | 1582 | 198 | 1545 | 203 | 8 | **797** | **197** | 800 | 196 | 797 | 197 |
| 433.milc | 16 | 842 | 174 | **833** | **176** | 833 | 176 | 16 | 861 | 171 | 839 | 175 | **842** | **174** |
| 434.zeusmp | 16 | 723 | 201 | **723** | **201** | 726 | 201 | 16 | 714 | 204 | **712** | **204** | 697 | 209 |
| 435.gromacs | 16 | 585 | 195 | 588 | 194 | **586** | **195** | 16 | 572 | 200 | 570 | 200 | **571** | **200** |
| 436.cactusADM | 16 | 859 | 223 | 868 | 220 | **865** | **221** | 16 | 913 | 210 | **893** | **214** | 891 | 215 |
| 437.leslie3d | 16 | 1108 | 136 | 1110 | 135 | **1108** | **136** | 8 | 563 | 134 | 564 | 133 | **563** | **134** |
| 444.namd | 16 | **713** | **180** | 710 | 181 | 714 | 180 | 16 | 704 | 182 | **703** | **183** | 699 | 184 |
| 447.dealII | 16 | 670 | 273 | 687 | 266 | **679** | **269** | 16 | 607 | 301 | 630 | 291 | **612** | **299** |
| 450.soplex | 16 | **1055** | **126** | 1060 | 126 | 1055 | 127 | 8 | 506 | 132 | **507** | **132** | 509 | 131 |
| 453.povray | 16 | 328 | 260 | 325 | 262 | **326** | **261** | 16 | 269 | 316 | 271 | 314 | **271** | **314** |
| 454.calculix | 16 | 574 | 230 | 572 | 231 | **572** | **231** | 16 | **574** | **230** | 574 | 230 | 574 | 230 |
| 459.GemsFDTD | 16 | **1749** | **97.0** | 1705 | 99.5 | 1819 | 93.3 | 8 | **675** | **126** | 678 | 125 | 675 | 126 |
| 465.tonto | 16 | **774** | **203** | 776 | 203 | 774 | 204 | 16 | 720 | 219 | 726 | 217 | **726** | **217** |
| 470.lbm | 16 | **1753** | **125** | 1753 | 125 | 1754 | 125 | 8 | 829 | 133 | **829** | **133** | 829 | 133 |
| 481.wrf | 16 | 781 | 229 | **780** | **229** | 779 | 229 | 16 | 781 | 229 | **780** | **229** | 779 | 229 |
| 482.sphinx3 | 16 | 1538 | 203 | **1538** | **203** | 1540 | 203 | 16 | 1481 | 211 | 1484 | 210 | **1484** | **210** |

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

## Base Compiler Invocation

C benchmarks:
icc

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## Base Compiler Invocation (Continued)

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

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc

482.sphinx3: icc -m32

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

450.soplex: icpc -m32

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
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

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: -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: -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)

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

Continued on next page

## Peak Optimization Flags (Continued)

436.cactusADM: `-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 -opt-prefetch -auto-ilp32`

454.calculix: `-xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32`

481.wrf: `basepeak = yes`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.04.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.04.xml`


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