# SPEC® CFP2006 Result

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## Itautec

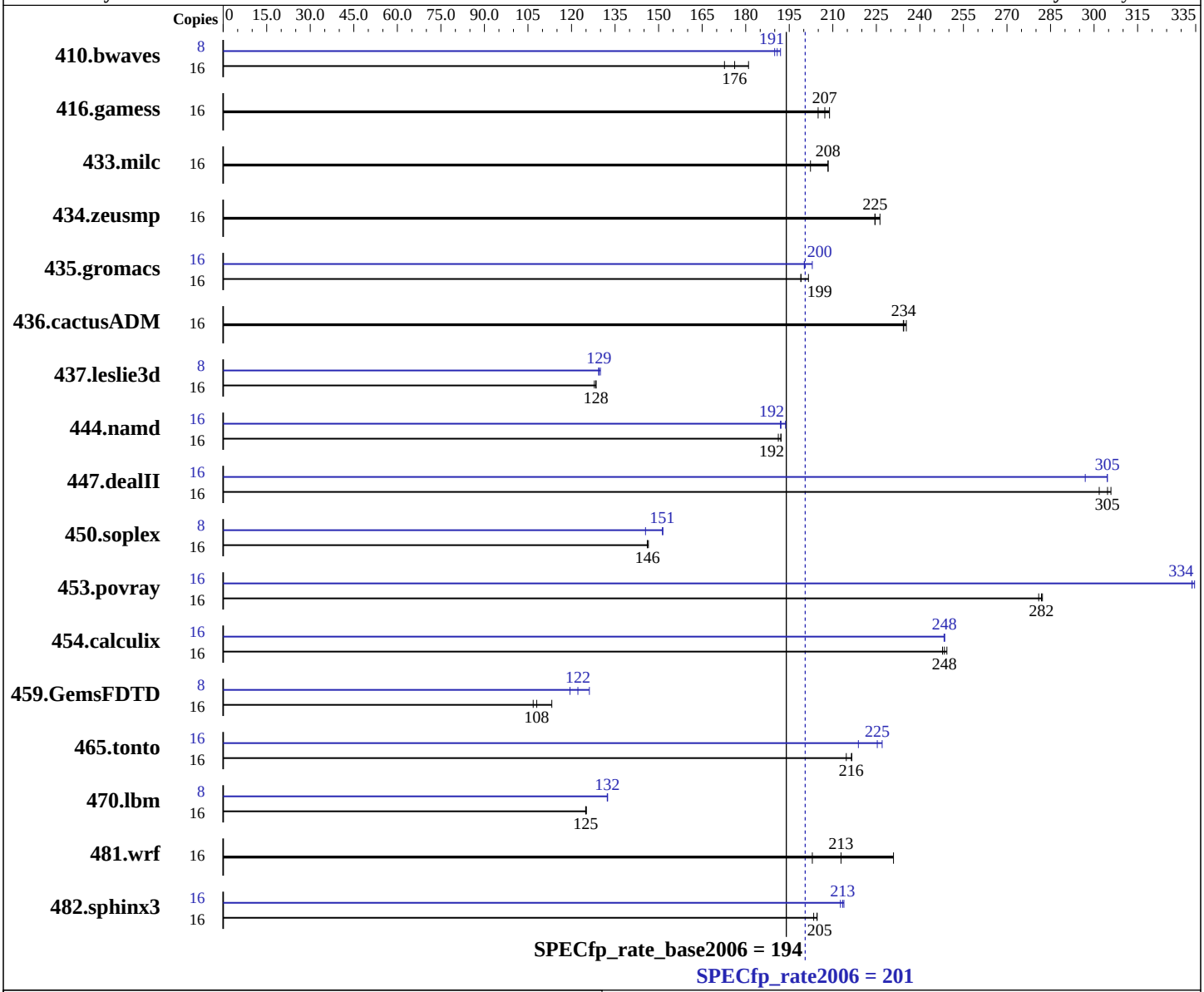
## Servidor Itautec MX203 (Intel Xeon X5570)

**SPECfp®_rate2006 = 201**

**SPECfp_rate_base2006 = 194**

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

**Test date:** Oct-2009
**Hardware Availability:** Mar-2009
**Software Availability:** May-2009




## Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5570 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.33 GHz |
| CPU MHz: | 2933 |
| 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 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 11.1 for Linux Build 20090511 Package ID: l_cproc_p_11.1.038, l_cprof_p_11.1.038 |
| 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: 24 GB (6 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 | 16 | 1201 | 181 | **1234** | **176** | 1259 | 173 | 8 | **570** | **191** | 566 | 192 | 572 | 190 |
| 416.gamess | 16 | 1500 | 209 | **1512** | **207** | 1529 | 205 | 16 | 1500 | 209 | **1512** | **207** | 1529 | 205 |
| 433.milc | 16 | 705 | 208 | **705** | **208** | 726 | 202 | 16 | 705 | 208 | **705** | **208** | 726 | 202 |
| 434.zeusmp | 16 | 649 | 224 | **648** | **225** | 644 | 226 | 16 | 649 | 224 | **648** | **225** | 644 | 226 |
| 435.gromacs | 16 | **574** | **199** | 567 | 202 | 574 | 199 | 16 | 563 | 203 | **571** | **200** | 571 | 200 |
| 436.cactusADM | 16 | **816** | **234** | 816 | 234 | 812 | 235 | 16 | **816** | **234** | 816 | 234 | 812 | 235 |
| 437.leslie3d | 16 | **1171** | **128** | 1171 | 128 | 1176 | 128 | 8 | 581 | 129 | 579 | 130 | **581** | **129** |
| 444.namd | 16 | 671 | 191 | 668 | 192 | **668** | **192** | 16 | 662 | 194 | 668 | 192 | **668** | **192** |
| 447.dealII | 16 | 607 | 302 | **601** | **305** | 599 | 306 | 16 | **601** | **305** | 616 | 297 | 601 | 305 |
| 450.soplex | 16 | 911 | 146 | 913 | 146 | **913** | **146** | 8 | 459 | 145 | **441** | **151** | 440 | 151 |
| 453.povray | 16 | 302 | 282 | 303 | 281 | **302** | **282** | 16 | 255 | 334 | 254 | 335 | **255** | **334** |
| 454.calculix | 16 | 529 | 249 | **531** | **248** | 533 | 248 | 16 | **531** | **248** | 532 | 248 | 531 | 249 |
| 459.GemsFDTD | 16 | 1499 | 113 | 1590 | 107 | **1571** | **108** | 8 | **695** | **122** | 710 | 119 | 673 | 126 |
| 465.tonto | 16 | 733 | 215 | 727 | 217 | **728** | **216** | 16 | 694 | 227 | **699** | **225** | 720 | 219 |
| 470.lbm | 16 | 1757 | 125 | **1760** | **125** | 1761 | 125 | 8 | 831 | 132 | **830** | **132** | 830 | 132 |
| 481.wrf | 16 | 774 | 231 | 881 | 203 | **840** | **213** | 16 | 774 | 231 | 881 | 203 | **840** | **213** |
| 482.sphinx3 | 16 | 1524 | 205 | 1533 | 203 | **1525** | **205** | 16 | 1458 | 214 | 1467 | 213 | **1461** | **213** |

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

## 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

## 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: basepeak = yes

470.lbm: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

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## Peak Optimization Flags (Continued)

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(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: -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/Itautec-Intel-ic11.1-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-ic11.1-fp-linux64-revI.xml


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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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