# SPEC® CFP2006 Result

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## Itautec

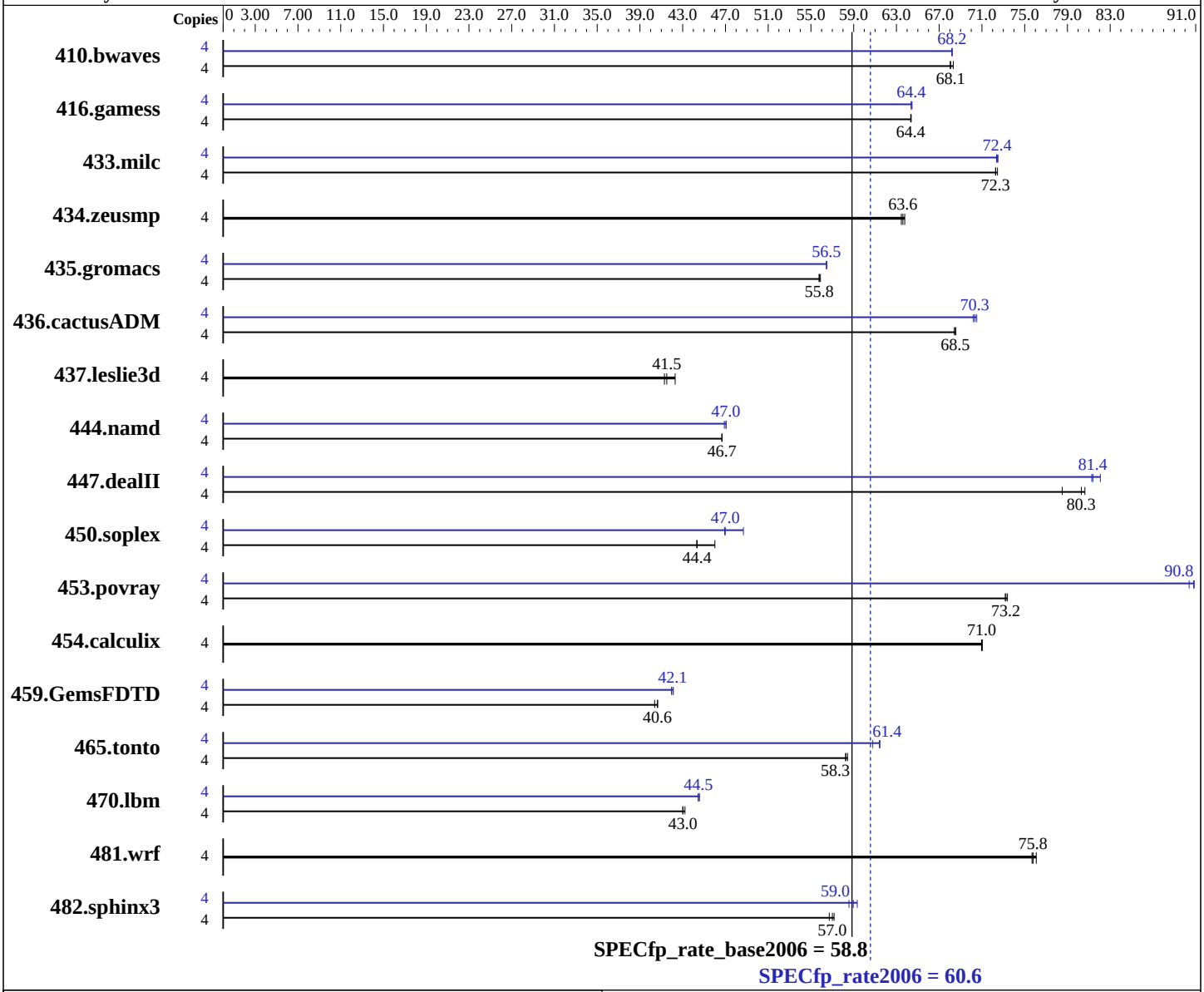
## Servidor Itautec MX203+ (Intel Xeon E5504)

**SPECfp®_rate2006 = 60.6**

**SPECfp_rate_base2006 = 58.8**

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

**Test date:** Oct-2009
**Hardware Availability:** Sep-2009
**Software Availability:** Feb-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5504 |
| CPU Characteristics: | |
| CPU MHz: | 2000 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 cores/chip |
| 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 11.0 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) |

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 9 GB (9 x 1GB DDR3-1066, CL 7, ECC, running at 800 MHz)
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 | 4 | 796 | 68.3 | **799** | **68.1** | 799 | 68.0 | 4 | 797 | 68.2 | 797 | 68.2 | **797** | **68.2** |
| 416.gamess | 4 | 1217 | 64.3 | 1216 | 64.4 | **1217** | **64.4** | 4 | 1217 | 64.4 | **1216** | **64.4** | 1215 | 64.5 |
| 433.milc | 4 | 507 | 72.5 | 508 | 72.3 | **508** | **72.3** | 4 | 506 | 72.5 | **507** | **72.4** | 507 | 72.4 |
| 434.zeusmp | 4 | 574 | 63.5 | 571 | 63.8 | **572** | **63.6** | 4 | 574 | 63.5 | 571 | 63.8 | **572** | **63.6** |
| 435.gromacs | 4 | 511 | 55.9 | **512** | **55.8** | 512 | 55.8 | 4 | 506 | 56.5 | **506** | **56.5** | 506 | 56.4 |
| 436.cactusADM | 4 | 697 | 68.6 | 699 | 68.4 | **698** | **68.5** | 4 | 681 | 70.2 | 678 | 70.5 | **680** | **70.3** |
| 437.leslie3d | 4 | 889 | 42.3 | 911 | 41.3 | **906** | **41.5** | 4 | 889 | 42.3 | 911 | 41.3 | **906** | **41.5** |
| 444.namd | 4 | 687 | 46.7 | **687** | **46.7** | 687 | 46.7 | 4 | 682 | 47.1 | 684 | 46.9 | **682** | **47.0** |
| 447.dealII | 4 | **570** | **80.3** | 583 | 78.5 | 568 | 80.6 | 4 | 563 | 81.3 | 557 | 82.1 | **562** | **81.4** |
| 450.soplex | 4 | 725 | 46.0 | 753 | 44.3 | **752** | **44.4** | 4 | 685 | 48.7 | 711 | 46.9 | **710** | **47.0** |
| 453.povray | 4 | **291** | **73.2** | 290 | 73.4 | 291 | 73.2 | 4 | 234 | 90.9 | **234** | **90.8** | 235 | 90.4 |
| 454.calculix | 4 | **465** | **71.0** | 465 | 71.0 | 465 | 71.0 | 4 | **465** | **71.0** | 465 | 71.0 | 465 | 71.0 |
| 459.GemsFDTD | 4 | 1051 | 40.4 | 1044 | 40.7 | **1044** | **40.6** | 4 | 1012 | 41.9 | 1007 | 42.1 | **1009** | **42.1** |
| 465.tonto | 4 | 676 | 58.2 | **675** | **58.3** | 674 | 58.4 | 4 | 648 | 60.8 | 640 | 61.5 | **641** | **61.4** |
| 470.lbm | 4 | 1272 | 43.2 | **1278** | **43.0** | 1278 | 43.0 | 4 | 1233 | 44.6 | **1236** | **44.5** | 1237 | 44.4 |
| 481.wrf | 4 | 590 | 75.7 | 587 | 76.1 | **590** | **75.8** | 4 | 590 | 75.7 | 587 | 76.1 | **590** | **75.8** |
| 482.sphinx3 | 4 | 1375 | 56.7 | **1368** | **57.0** | 1364 | 57.2 | 4 | 1331 | 58.6 | **1322** | **59.0** | 1314 | 59.3 |

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:
ifort

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
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

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: basepeak = yes

437.leslie3d: basepeak = yes

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: -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

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## Peak Optimization Flags (Continued)

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-ic11.0-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-ic11.0-fp-linux64-revI.xml`


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