



SPEC® CFP2006 Result

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Itautec

SPECfp®_rate2006 = 39.5

Servidor Itautec LX211 (Intel Xeon X5460)

SPECfp_rate_base2006 = 36.7

CPU2006 license: 9001

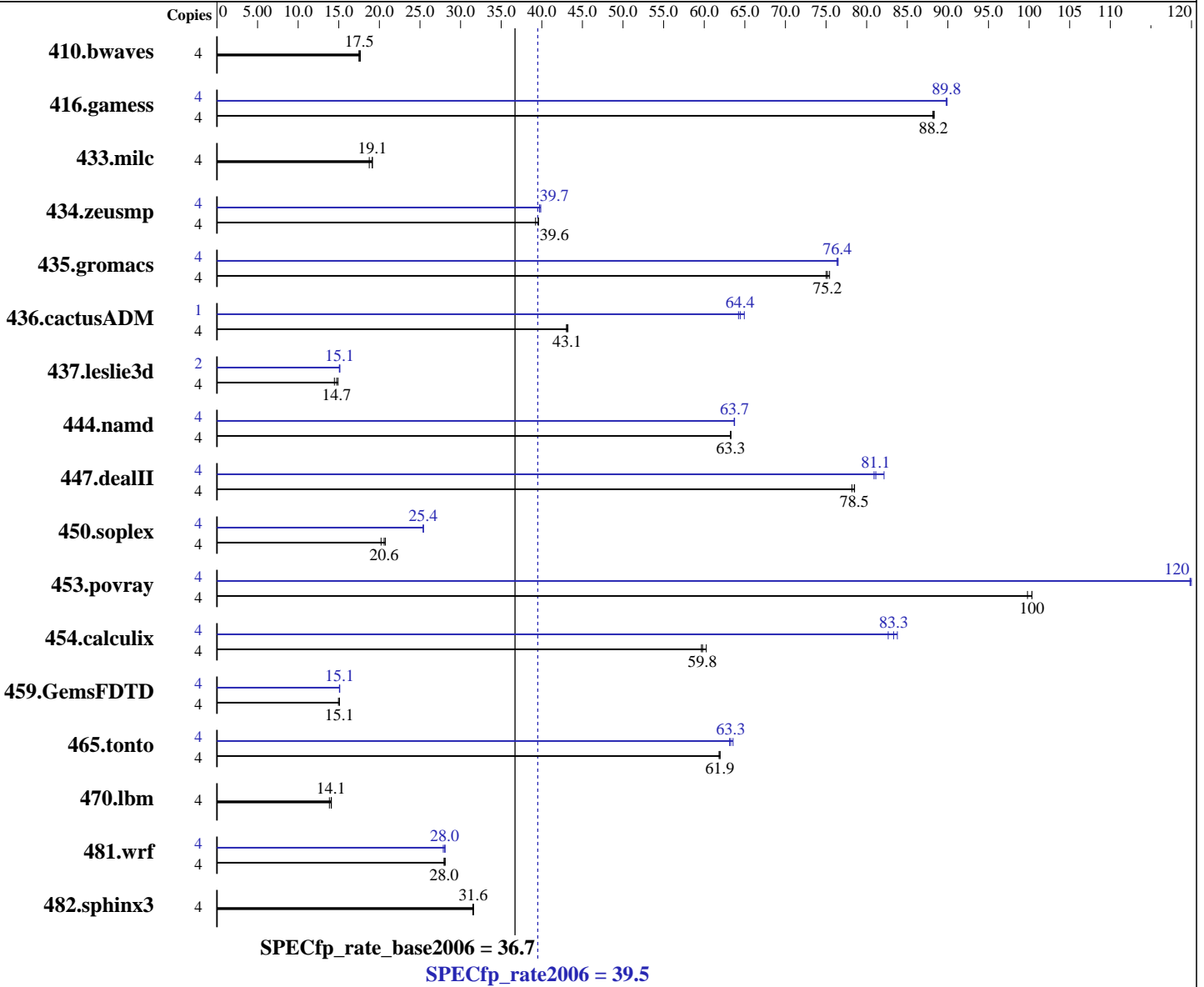
Test date: Apr-2008

Test sponsor: Itautec

Hardware Availability: Dec-2007

Tested by: Itautec

Software Availability: Jan-2008



Hardware

CPU Name: Intel Xeon X5460
 CPU Characteristics: 3160
 CPU MHz: 3160
 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: 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: 12 GB (6 * 2 GB PC2-5300 FBDIMM, CL-5-5-5, ECC)
Disk Subsystem: 1 x SCSI, 73GB, 10000 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 | 4 | 3108 | 17.5 | <u>3101</u> | <u>17.5</u> | 3079 | 17.7 | 4 | 3108 | 17.5 | <u>3101</u> | <u>17.5</u> | 3079 | 17.7 | | |
| 416.gamess | 4 | 887 | 88.3 | <u>888</u> | <u>88.2</u> | 888 | 88.2 | 4 | <u>872</u> | <u>89.8</u> | 872 | 89.8 | 871 | 89.9 | | |
| 433.milc | 4 | 1958 | 18.8 | 1919 | 19.1 | <u>1919</u> | <u>19.1</u> | 4 | 1958 | 18.8 | 1919 | 19.1 | <u>1919</u> | <u>19.1</u> | | |
| 434.zeusmp | 4 | 928 | 39.2 | 919 | 39.6 | <u>920</u> | <u>39.6</u> | 4 | 913 | 39.9 | 916 | 39.7 | <u>916</u> | <u>39.7</u> | | |
| 435.gromacs | 4 | 379 | 75.4 | <u>380</u> | <u>75.2</u> | 381 | 75.0 | 4 | 374 | 76.4 | 373 | 76.5 | <u>374</u> | <u>76.4</u> | | |
| 436.cactusADM | 4 | <u>1109</u> | <u>43.1</u> | 1106 | 43.2 | 1111 | 43.0 | 1 | 184 | 64.9 | 186 | 64.2 | <u>185</u> | <u>64.4</u> | | |
| 437.leslie3d | 4 | 2601 | 14.5 | 2521 | 14.9 | <u>2551</u> | <u>14.7</u> | 2 | 1243 | 15.1 | <u>1244</u> | <u>15.1</u> | 1248 | 15.1 | | |
| 444.namd | 4 | 507 | 63.3 | <u>507</u> | <u>63.3</u> | 507 | 63.2 | 4 | 503 | 63.7 | 504 | 63.7 | <u>503</u> | <u>63.7</u> | | |
| 447.dealII | 4 | 585 | 78.2 | <u>583</u> | <u>78.5</u> | 583 | 78.5 | 4 | 557 | 82.1 | 566 | 80.9 | <u>564</u> | <u>81.1</u> | | |
| 450.soplex | 4 | 1651 | 20.2 | <u>1621</u> | <u>20.6</u> | 1608 | 20.7 | 4 | <u>1313</u> | <u>25.4</u> | 1312 | 25.4 | 1313 | 25.4 | | |
| 453.povray | 4 | 212 | 100 | 213 | 99.8 | <u>212</u> | <u>100</u> | 4 | <u>178</u> | <u>120</u> | 177 | 120 | 178 | 120 | | |
| 454.calculix | 4 | 553 | 59.7 | <u>552</u> | <u>59.8</u> | 548 | 60.3 | 4 | <u>396</u> | <u>83.3</u> | 394 | 83.8 | 399 | 82.7 | | |
| 459.GemsFDTD | 4 | 2837 | 15.0 | <u>2815</u> | <u>15.1</u> | 2813 | 15.1 | 4 | 2815 | 15.1 | 2807 | 15.1 | <u>2811</u> | <u>15.1</u> | | |
| 465.tonto | 4 | 637 | 61.8 | 635 | 62.0 | <u>636</u> | <u>61.9</u> | 4 | 619 | 63.5 | 624 | 63.1 | <u>622</u> | <u>63.3</u> | | |
| 470.lbm | 4 | 3970 | 13.8 | <u>3907</u> | <u>14.1</u> | 3900 | 14.1 | 4 | 3970 | 13.8 | <u>3907</u> | <u>14.1</u> | 3900 | 14.1 | | |
| 481.wrf | 4 | <u>1597</u> | <u>28.0</u> | 1597 | 28.0 | 1590 | 28.1 | 4 | 1603 | 27.9 | 1591 | 28.1 | <u>1593</u> | <u>28.0</u> | | |
| 482.sphinx3 | 4 | 2467 | 31.6 | 2475 | 31.5 | <u>2470</u> | <u>31.6</u> | 4 | 2467 | 31.6 | 2475 | 31.5 | <u>2470</u> | <u>31.6</u> | | |

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



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Platform Notes

BIOS configuration:
Hardware Prefetch Disabled

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.deallI: -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:
-fast

C++ benchmarks:
-fast

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Base Optimization Flags (Continued)

Fortran benchmarks:
-fast

Benchmarks using both Fortran and C:
-fast

Peak Compiler Invocation

C benchmarks:
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
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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Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

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: basepeak = yes

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

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

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Peak Optimization Flags (Continued)

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/Itaotec-ic10.1-FP-intel64-linux-flags.20090713.00.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Itaotec-ic10.1-FP-intel64-linux-flags.20090713.00.xml>

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For other inquiries, please contact webmaster@spec.org.

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