SPEC® CFP2006 Result

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Itautec

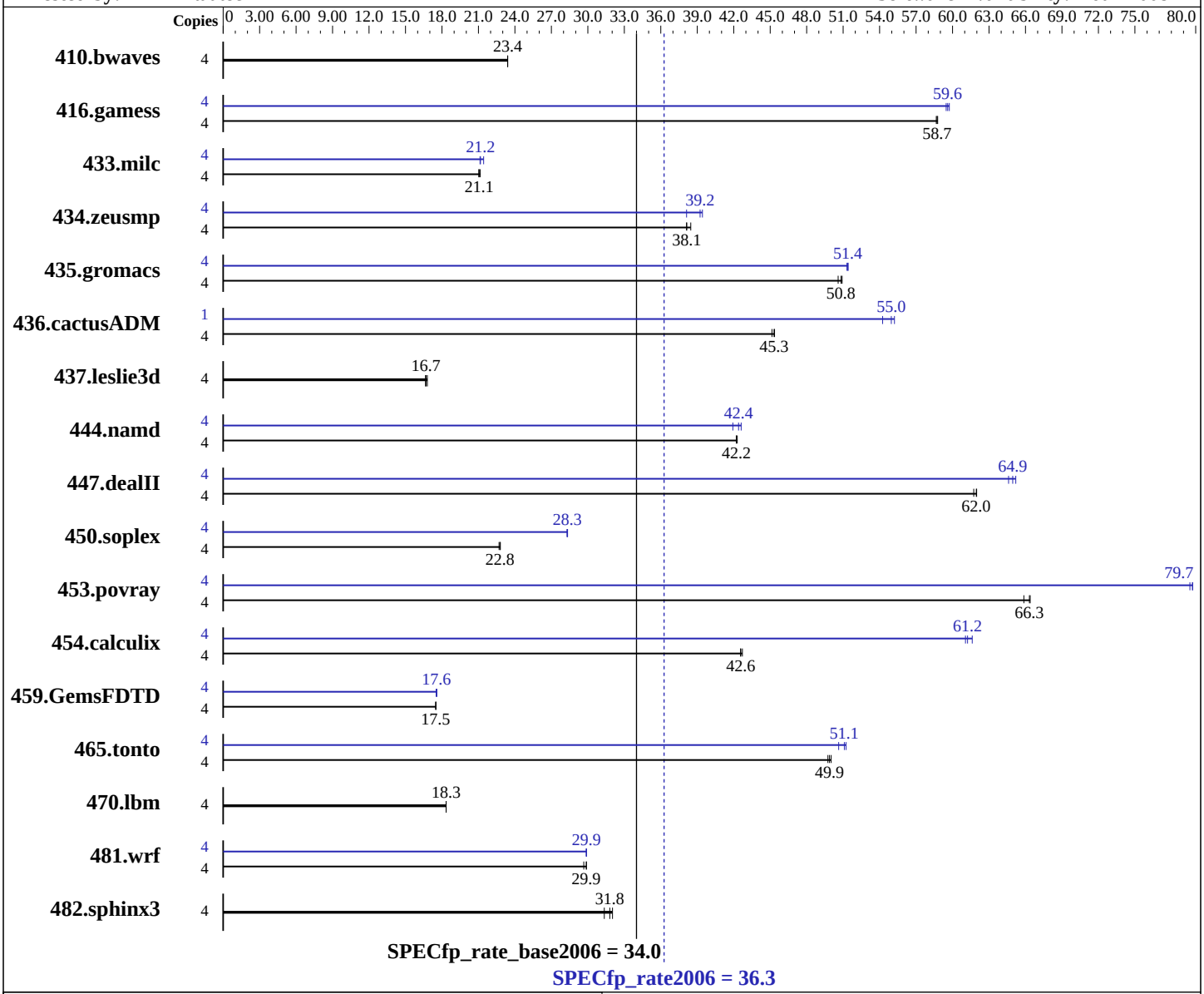
Servidor Itautec MX221 (Intel Xeon E5405)

SPECfp®_rate2006 = 36.3

SPECfp_rate_base2006 = 34.0

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

Test date: Apr-2008
Hardware Availability: Dec-2007
Software Availability: Jan-2008



Hardware

CPU Name:	Intel Xeon E5405
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:	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: 16 GB (8 * 2 GB PC2-5300 FBDIMM, CL-5-5-5, ECC)
Disk Subsystem: 1 x SCSI, 73GB, 15000 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	2323	23.4	**2323**	**23.4**	2322	23.4	4	2323	23.4	**2323**	**23.4**	2322	23.4
416.gamess	4	1335	58.7	1333	58.8	**1334**	**58.7**	4	1317	59.5	1311	59.7	**1314**	**59.6**
433.milc	4	1736	21.2	1746	21.0	**1743**	**21.1**	4	**1735**	**21.2**	1714	21.4	1738	21.1
434.zeusmp	4	**955**	**38.1**	955	38.1	946	38.5	4	**928**	**39.2**	923	39.4	955	38.1
435.gromacs	4	**562**	**50.8**	565	50.6	561	50.9	4	557	51.3	556	51.4	**556**	**51.4**
436.cactusADM	4	1059	45.1	**1055**	**45.3**	1054	45.4	1	216	55.2	220	54.2	**217**	**55.0**
437.leslie3d	4	2259	16.6	2238	16.8	**2253**	**16.7**	4	2259	16.6	2238	16.8	**2253**	**16.7**
444.namd	4	759	42.3	760	42.2	**760**	**42.2**	4	**757**	**42.4**	753	42.6	765	41.9
447.dealII	4	**739**	**62.0**	738	62.0	741	61.7	4	702	65.2	708	64.6	**705**	**64.9**
450.soplex	4	**1465**	**22.8**	1463	22.8	1470	22.7	4	1180	28.3	1177	28.3	**1178**	**28.3**
453.povray	4	323	65.9	321	66.4	**321**	**66.3**	4	**267**	**79.7**	267	79.7	268	79.5
454.calculix	4	775	42.6	**775**	**42.6**	773	42.7	4	540	61.1	**539**	**61.2**	536	61.6
459.GemsFDTD	4	**2426**	**17.5**	2426	17.5	2425	17.5	4	2422	17.5	2415	17.6	**2417**	**17.6**
465.tonto	4	787	50.0	791	49.7	**789**	**49.9**	4	**770**	**51.1**	777	50.6	768	51.2
470.lbm	4	2997	18.3	**2997**	**18.3**	2996	18.3	4	2997	18.3	**2997**	**18.3**	2996	18.3
481.wrf	4	**1496**	**29.9**	1495	29.9	1506	29.7	4	1496	29.9	1495	29.9	**1495**	**29.9**
482.sphinx3	4	2434	32.0	**2451**	**31.8**	2487	31.4	4	2434	32.0	**2451**	**31.8**	2487	31.4

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.
```

Platform Notes

```
BIOS configuration:
Hardware Prefetch Disabled
```

General Notes

```
This result was measured on the Servidor Itautec MX201.
The Servidor Itautec MX221 and the Servidor Itautec MX201 are electronically equivalent.
```

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:
`-fast`

C++ benchmarks:
`-fast`

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:
`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`

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Peak Portability Flags (Continued)

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

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: basepeak = yes

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

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Peak Optimization Flags (Continued)

436.cactusADM: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -prefetch -parallel -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

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/Itautec-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/Itautec-ic10.1-FP-intel64-linux-flags.20090713.00.xml`

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