SPEC® CFP2006 Result

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Itautec

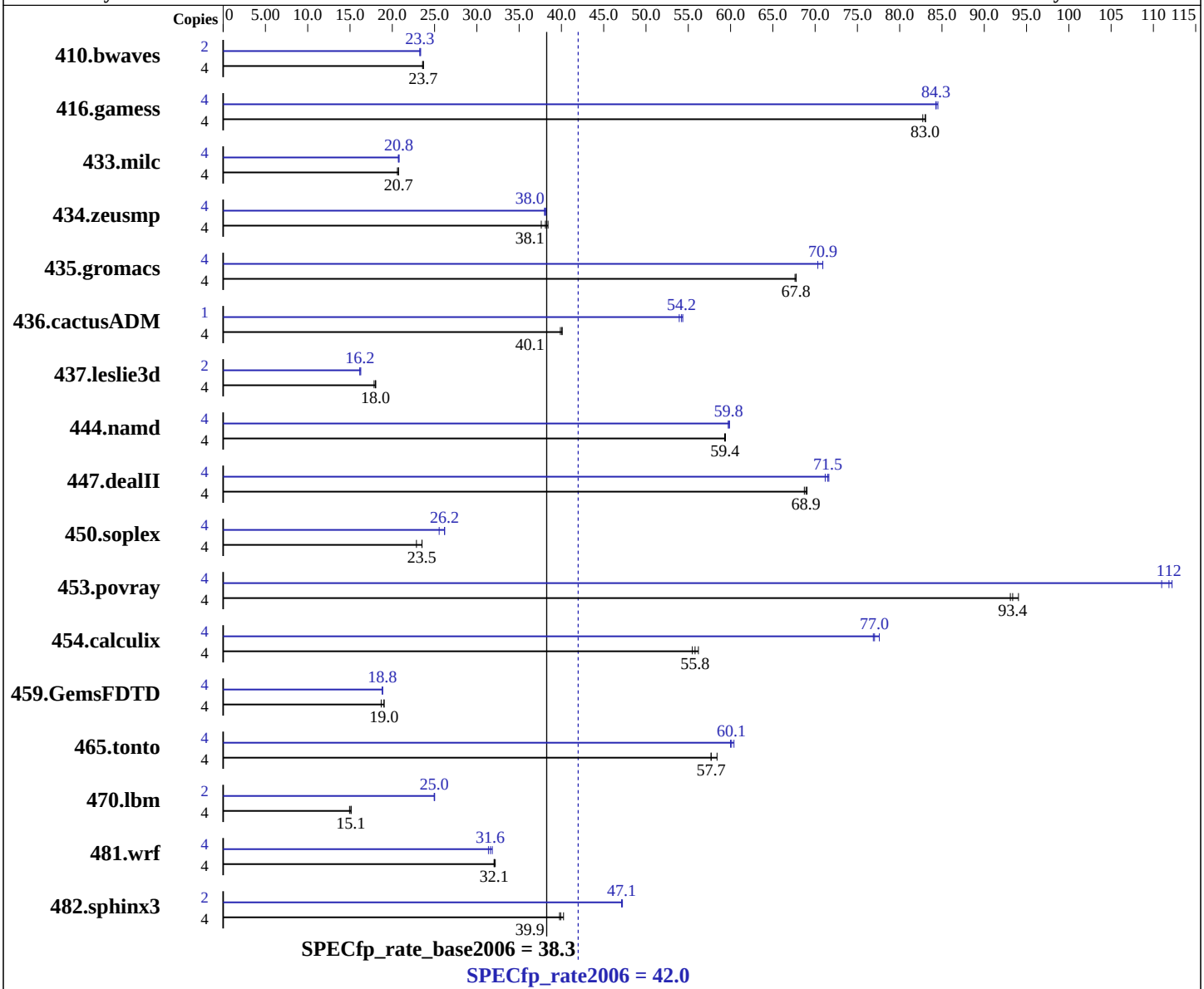
Servidor Itautec LX201 (Intel Xeon E5440)

SPECfp®_rate2006 = 42.0

SPECfp_rate_base2006 = 38.3

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

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



Hardware

CPU Name:	Intel Xeon E5440
CPU Characteristics:	
CPU MHz:	2830
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 10.1 for Linux 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)
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (8 * 1 GB PC2-5300 FBDIMM, CL-5-5-5, ECC)
Disk Subsystem: 1 x SATA-2, 160GB, 7200 RPM
Other Hardware: None

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	2305	23.6	**2298**	**23.7**	2295	23.7	2	1168	23.3	**1168**	**23.3**	1164	23.4
416.gamess	4	943	83.1	**943**	**83.0**	947	82.7	4	927	84.5	929	84.3	**929**	**84.3**
433.milc	4	1782	20.6	**1772**	**20.7**	1771	20.7	4	1773	20.7	**1767**	**20.8**	1765	20.8
434.zeusmp	4	968	37.6	**955**	**38.1**	948	38.4	4	**957**	**38.0**	958	38.0	953	38.2
435.gromacs	4	**422**	**67.8**	422	67.6	421	67.8	4	403	70.9	**403**	**70.9**	406	70.3
436.cactusADM	4	1199	39.9	**1193**	**40.1**	1192	40.1	1	220	54.4	222	53.9	**220**	**54.2**
437.leslie3d	4	2106	17.9	**2088**	**18.0**	2083	18.0	2	1163	16.2	1155	16.3	**1163**	**16.2**
444.namd	4	541	59.3	540	59.4	**540**	**59.4**	4	**537**	**59.8**	537	59.7	536	59.9
447.dealII	4	666	68.7	663	69.1	**664**	**68.9**	4	643	71.2	639	71.6	**640**	**71.5**
450.soplex	4	1460	22.9	1418	23.5	**1419**	**23.5**	4	1306	25.5	**1275**	**26.2**	1273	26.2
453.povray	4	**228**	**93.4**	229	93.1	226	94.0	4	192	111	**190**	**112**	190	112
454.calculix	4	595	55.5	587	56.2	**591**	**55.8**	4	425	77.6	**428**	**77.0**	429	76.9
459.GemsFDTD	4	2230	19.0	**2231**	**19.0**	2271	18.7	4	**2253**	**18.8**	2251	18.9	2256	18.8
465.tonto	4	674	58.4	682	57.7	**682**	**57.7**	4	652	60.4	656	60.0	**655**	**60.1**
470.lbm	4	3678	14.9	**3637**	**15.1**	3632	15.1	2	**1101**	**25.0**	1101	25.0	1099	25.0
481.wrf	4	**1394**	**32.1**	1388	32.2	1395	32.0	4	**1414**	**31.6**	1424	31.4	1404	31.8
482.sphinx3	4	1937	40.3	**1953**	**39.9**	1960	39.8	2	826	47.2	**827**	**47.1**	827	47.1

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.
```

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.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

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Base Optimization Flags (Continued)

Fortran benchmarks:
`-fast`

Benchmarks using both Fortran and C:
`-fast`

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.012/bin/icc -L/opt/intel/cc/10.1.012/lib -I/opt/intel/cc/10.1.012/include`

433.milc: `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`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

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

470.lbm: `-prof-gen`(pass 1) `-prof-use`(pass 2) `-fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3`

482.sphinx3: `-fast -unroll2`

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: `-fast -prefetch`

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`

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Peak Optimization Flags (Continued)

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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