SPEC® CFP2006 Result

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Itautec

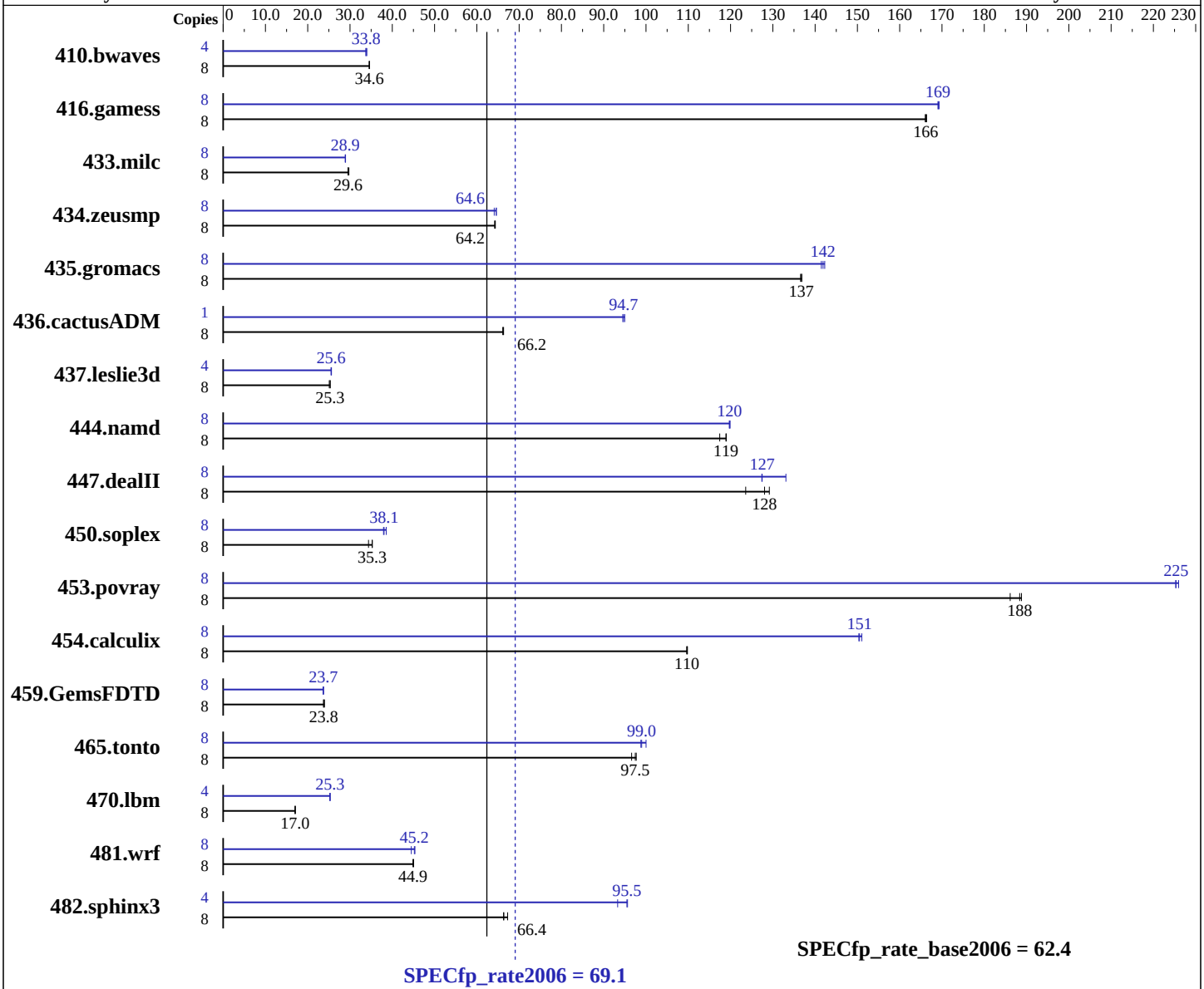
Servidor Itautec LX211 (Intel Xeon E5440)

SPECfp®_rate2006 = 69.1

SPECfp_rate_base2006 = 62.4

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

Test date: May-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:	8 cores, 2 chips, 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 and 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	8	3143	34.6	3147	34.5	**3144**	**34.6**	4	1611	33.7	1600	34.0	**1609**	**33.8**
416.gamess	8	942	166	**943**	**166**	943	166	8	925	169	926	169	**926**	**169**
433.milc	8	2469	29.7	2487	29.5	**2485**	**29.6**	8	**2540**	**28.9**	2537	28.9	2544	28.9
434.zeusmp	8	1131	64.4	**1133**	**64.2**	1133	64.2	8	**1127**	**64.6**	1127	64.6	1136	64.1
435.gromacs	8	418	137	**418**	**137**	417	137	8	401	142	**403**	**142**	404	141
436.cactusADM	8	1446	66.1	1441	66.3	**1444**	**66.2**	1	126	95.0	126	94.5	**126**	**94.7**
437.leslie3d	8	2997	25.1	2972	25.3	**2972**	**25.3**	4	1473	25.5	1468	25.6	**1471**	**25.6**
444.namd	8	**540**	**119**	546	117	539	119	8	535	120	**536**	**120**	536	120
447.dealII	8	**715**	**128**	741	124	709	129	8	**718**	**127**	688	133	718	127
450.soplex	8	1941	34.4	1892	35.3	**1893**	**35.3**	8	1759	37.9	**1753**	**38.1**	1730	38.6
453.povray	8	229	186	**226**	**188**	225	189	8	**189**	**225**	189	225	188	226
454.calculix	8	601	110	602	110	**602**	**110**	8	437	151	**439**	**151**	439	150
459.GemsFDTD	8	3541	24.0	3576	23.7	**3570**	**23.8**	8	**3577**	**23.7**	3576	23.7	3594	23.6
465.tonto	8	815	96.6	**808**	**97.5**	806	97.7	8	787	100	**795**	**99.0**	797	98.8
470.lbm	8	6441	17.1	**6451**	**17.0**	6468	17.0	4	2173	25.3	2178	25.2	**2173**	**25.3**
481.wrf	8	**1989**	**44.9**	1989	44.9	1983	45.1	8	2008	44.5	1970	45.4	**1976**	**45.2**
482.sphinx3	8	**2349**	**66.4**	2351	66.3	2317	67.3	4	836	93.3	815	95.6	**816**	**95.5**

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.cactuADM at peak.
```

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.20090714.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.20090714.xml`

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