SPEC® CFP2006 Result

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Sun Microsystems

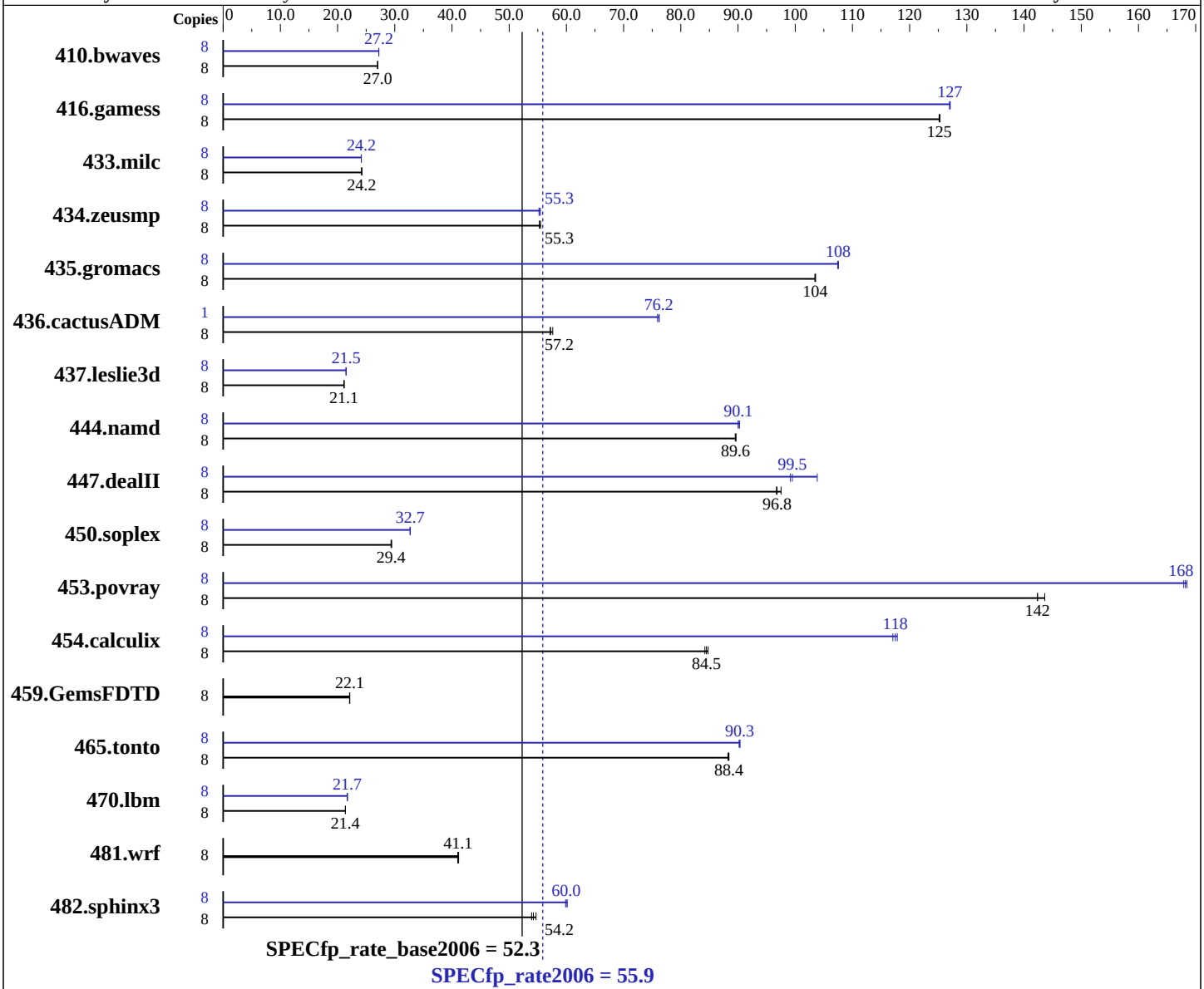
Sun Netra X4250 (Intel Xeon L5408 2.13GHz)

SPECfp®_rate2006 = 55.9

SPECfp_rate_base2006 = 52.3

CPU2006 license: 6
Test sponsor: Sun Microsystems
Tested by: Sun Microsystems

Test date: Aug-2008
Hardware Availability: Aug-2008
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon L5408
CPU Characteristics:	
CPU MHz:	2133
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	2,4 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 Linux32 and Linux64 version 10.1 Build 20070913
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 64 GB (16x4 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: SAS, 146GB, 10K RPM
Other Hardware: None

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	4027	27.0	4025	27.0	**4025**	**27.0**	8	**3996**	**27.2**	3997	27.2	3995	27.2
416.gamess	8	1252	125	**1251**	**125**	1250	125	8	**1233**	**127**	1232	127	1234	127
433.milc	8	3033	24.2	**3032**	**24.2**	3031	24.2	8	3042	24.1	3040	24.2	**3041**	**24.2**
434.zeusmp	8	1317	55.3	**1317**	**55.3**	1312	55.5	8	1319	55.2	1313	55.5	**1317**	**55.3**
435.gromacs	8	552	103	**552**	**104**	552	104	8	531	108	**531**	**108**	532	107
436.cactusADM	8	**1670**	**57.2**	1673	57.2	1659	57.6	1	157	76.2	157	75.9	**157**	**76.2**
437.leslie3d	8	**3558**	**21.1**	3564	21.1	3554	21.2	8	3501	21.5	**3499**	**21.5**	3497	21.5
444.namd	8	**716**	**89.6**	716	89.6	717	89.5	8	713	90.0	711	90.3	**712**	**90.1**
447.dealII	8	938	97.5	946	96.7	**945**	**96.8**	8	923	99.1	881	104	**920**	**99.5**
450.soplex	8	2264	29.5	2273	29.4	**2272**	**29.4**	8	2043	32.7	2040	32.7	**2040**	**32.7**
453.povray	8	**299**	**142**	296	144	299	142	8	253	168	253	168	**253**	**168**
454.calculix	8	779	84.8	**781**	**84.5**	784	84.2	8	560	118	**562**	**118**	564	117
459.GemsFDTD	8	3836	22.1	3842	22.1	**3837**	**22.1**	8	3836	22.1	3842	22.1	**3837**	**22.1**
465.tonto	8	**891**	**88.4**	890	88.4	892	88.2	8	871	90.4	**872**	**90.3**	873	90.2
470.lbm	8	5146	21.4	**5142**	**21.4**	5141	21.4	8	5065	21.7	**5064**	**21.7**	5063	21.7
481.wrf	8	**2174**	**41.1**	2179	41.0	2171	41.2	8	**2174**	**41.1**	2179	41.0	2171	41.2
482.sphinx3	8	**2875**	**54.2**	2891	53.9	2851	54.7	8	2605	59.9	2592	60.2	**2600**	**60.0**

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.
```

Operating System Notes

```
taskset was used to bind processes to cores except for 436.cactusADM peak

'ulimit -s unlimited' was used to set the stacksize to unlimited
OMP_NUM_THREADS set to number of cores.
KMP_STACKSIZE set to 64M
KMP_AFFINITY set to physical,0
```

Platform Notes

Default BIOS configurations were used.

General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode

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

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Base Optimization Flags (Continued)

C++ benchmarks:
`-fast`

Fortran benchmarks:
`-fast`

Benchmarks using both Fortran and C:
`-fast`

Peak Compiler Invocation

C benchmarks (except as noted below):
`/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

433.milc: `icc`

C++ benchmarks (except as noted below):
`icpc`

450.soplex: `/opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib -I/opt/intel/cc/10.1.008/include`

Fortran benchmarks (except as noted below):
`ifort`

437.leslie3d: `/opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib -I/opt/intel/fc/10.1.008/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`

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Peak Portability Flags (Continued)

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: basepeak = yes

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

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

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`

481.wrf: `basepeak = yes`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.xml`

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