



SPEC® CFP2006 Result

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Sun Microsystems

SPECfp®2006 = 27.8

Sun Fire X2250 (Intel Xeon X5482 3.2GHz)

SPECfp_base2006 = 25.8

CPU2006 license: 6

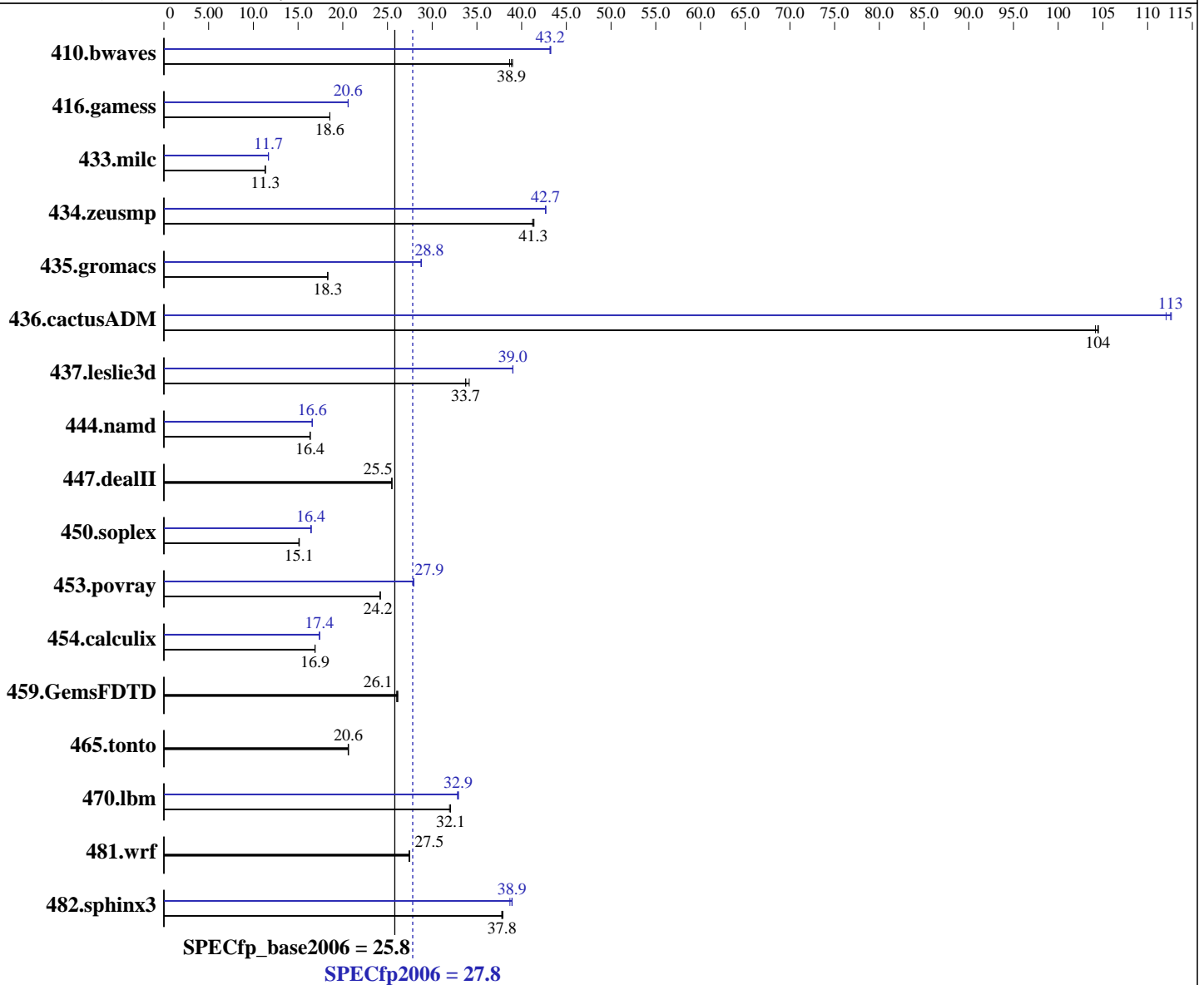
Test sponsor: Sun Microsystems

Tested by: Sun Microsystems

Test date: Sep-2008

Hardware Availability: Oct-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon X5482
 CPU Characteristics: 3200
 CPU MHz: 3200
 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: OpenSolaris 2008.05
 Compiler: Sun Studio Express 11/08
 Auto Parallel: Yes
 File System: OS on zfs, Benchmark on ufs
 System State: Default
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None



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L3 Cache: None
Other Cache: None
Memory: 16 GB (4*4GB Dual-rank PC2-6400 CL5-5-5 FB-DIMMs)
Disk Subsystem: 2 x 250 GB SATA 7200 RPM
Other Hardware: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	352	38.7	350	38.9	349	39.0	315	43.2	315	43.2	314	43.3
416.gamess	1056	18.5	1055	18.6	1055	18.6	951	20.6	950	20.6	950	20.6
433.milc	812	11.3	809	11.3	809	11.3	785	11.7	785	11.7	786	11.7
434.zeusmp	221	41.2	220	41.3	220	41.4	213	42.7	213	42.7	213	42.7
435.gromacs	390	18.3	390	18.3	390	18.3	248	28.8	248	28.8	248	28.8
436.cactusADM	115	104	114	105	114	104	107	112	106	113	106	113
437.leslie3d	279	33.7	279	33.7	275	34.1	241	39.0	241	39.0	241	39.0
444.namd	490	16.4	490	16.4	490	16.4	484	16.6	484	16.6	484	16.6
447.dealII	449	25.5	449	25.5	449	25.5	449	25.5	449	25.5	449	25.5
450.soplex	552	15.1	551	15.1	552	15.1	508	16.4	506	16.5	507	16.4
453.povray	220	24.2	220	24.2	220	24.2	190	27.9	190	27.9	191	27.9
454.calculix	488	16.9	488	16.9	488	16.9	474	17.4	474	17.4	474	17.4
459.GemsFDTD	408	26.0	407	26.1	406	26.2	408	26.0	407	26.1	406	26.2
465.tonto	478	20.6	477	20.6	477	20.6	478	20.6	477	20.6	477	20.6
470.lbm	430	31.9	429	32.1	429	32.1	417	32.9	418	32.9	419	32.8
481.wrf	407	27.4	407	27.5	407	27.5	407	27.4	407	27.5	407	27.5
482.sphinx3	514	37.9	516	37.8	516	37.8	501	38.9	504	38.7	501	38.9

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Environment variable SUNW_MP_THR_IDLE set to SPIN
Environment variable OMP_NUM_THREADS set to 8
'ulimit -s unlimited' was used to set environment stack size

Added additional 8GB of swap from UFS filesystem, using following commands:
mkfile 8g /datal/swapfile; swap -a /datal/swapfile

Kernel Parameters (/etc/system):
autoup=900
tune_t_fsflushr=1
max_utext_lpsize=0x200000



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Platform Notes

BIOS configuration:

Hardware Prefetch : Enabled; Adjacent Sector Prefetch : Enabled

Base Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

f90

Benchmarks using both Fortran and C:

cc f90

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
 436.cactusADM: -DSPEC_CPU_LP64
 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
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64
 470.lbm: -DSPEC_CPU_LP64
 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_WORDS_LITTLEENDIAN
 482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-fast -xautopar -xipo=2 -xvector=simd -m64

C++ benchmarks:

-fast -xipo=2 -xvector=simd -m64 -library=stlport4

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Base Optimization Flags (Continued)

Fortran benchmarks:

-fast -xautopar -xipo=2 -xvector=simd -m64

Benchmarks using both Fortran and C:

-fast(cc) -xautopar -xipo=2 -xvector=simd -m64 -fast(f90)

Base Other Flags

C benchmarks:

-V

C++ benchmarks:

-verbose=version

Fortran benchmarks:

-V

Benchmarks using both Fortran and C:

-V

Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

f90

Benchmarks using both Fortran and C:

cc f90

Peak Portability Flags

436.cactusADM: -DSPEC_CPU_LP64

447.dealII: -DSPEC_CPU_LP64

459.GemsFDTD: -DSPEC_CPU_LP64

465.tonto: -DSPEC_CPU_LP64

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_WORDS_LITTLEENDIAN



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Peak Optimization Flags

C benchmarks:

433.milc: -fast -xautopar -xipo=2 -xvector=lib -xprefetch
-xprefetch_level=3 -m64

470.lbm: -fast -xautopar -xipo=2 -xvector=lib -xprefetch
-xprefetch_level=3 -m64 -lmtmalloc

482.sphinx3: -fast -xipo=2 -xvector=simd -m64 -xpagesize=2M -xautopar
-xreduction

C++ benchmarks:

444.namd: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xvector=simd -m64 -xpagesize=2M -xautopar -xreduction
-library=stlport4

447.dealIII: basepeak = yes

450.soplex: -fast -xipo=2 -m32 -xpagesize=2M -library=stlport4

453.povray: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xvector=simd -lumem -xalias_level=compatible -xautopar
-xpagesize=2M -lmtmalloc -Qoption ube -fsimple=3
-library=stlport4

Fortran benchmarks:

410.bwaves: -O2 -m64 -xipo=2 -xprefetch -xprefetch_level=2 -xautopar
-xreduction -Qoption ube -fsimple=3 -lmvec -lmtmalloc

416.gamess: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xdepend -xalias -stackvar -aligncommon=16
-Qoption ube -fsimple=3 -xpagesize=2M

434.zeusmp: -fast -xautopar

437.leslie3d: -fast -xautopar -xipo=2 -xvector=lib -xprefetch
-xprefetch_level=3 -m64

459.GemsFDTD: basepeak = yes

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

```
435.gromacs: -xprofile=collect:./feedback(pass 1)
             -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
             -xipo=2 -m64 -xpagesize=2M -xautopar -xreduction -lmvec
             -lmtmalloc -Wu,-fsimple=3 -Qoption ube -fsimple=3
```

```
436.cactusADM: -xprofile=collect:./feedback(pass 1)
               -xprofile=use:./feedback(pass 2) -fast(cc) -xautopar
               -xipo=2 -xvector=simd -m64 -xpagesize_heap=2m
               -Wu,-fsimple=3 -fast(f90) -Qoption ube -fsimple=3
               -Qoption iropt -Aujam:noninner
```

```
454.calculix: -fast(cc) -fast(f90) -xipo=2 -m64 -xvector=simd
              -Wu,-sched_first_pass=0 -lmvec -lmtmalloc
              -Qoption ube -sched_first_pass=1
```

481.wrf: basepeak = yes

Peak Other Flags

C benchmarks:

-V

C++ benchmarks:

-verbose=version

Fortran benchmarks:

-V

Benchmarks using both Fortran and C:

-V

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090713.html

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

http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090713.xml



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