SPEC® CFP2006 Result

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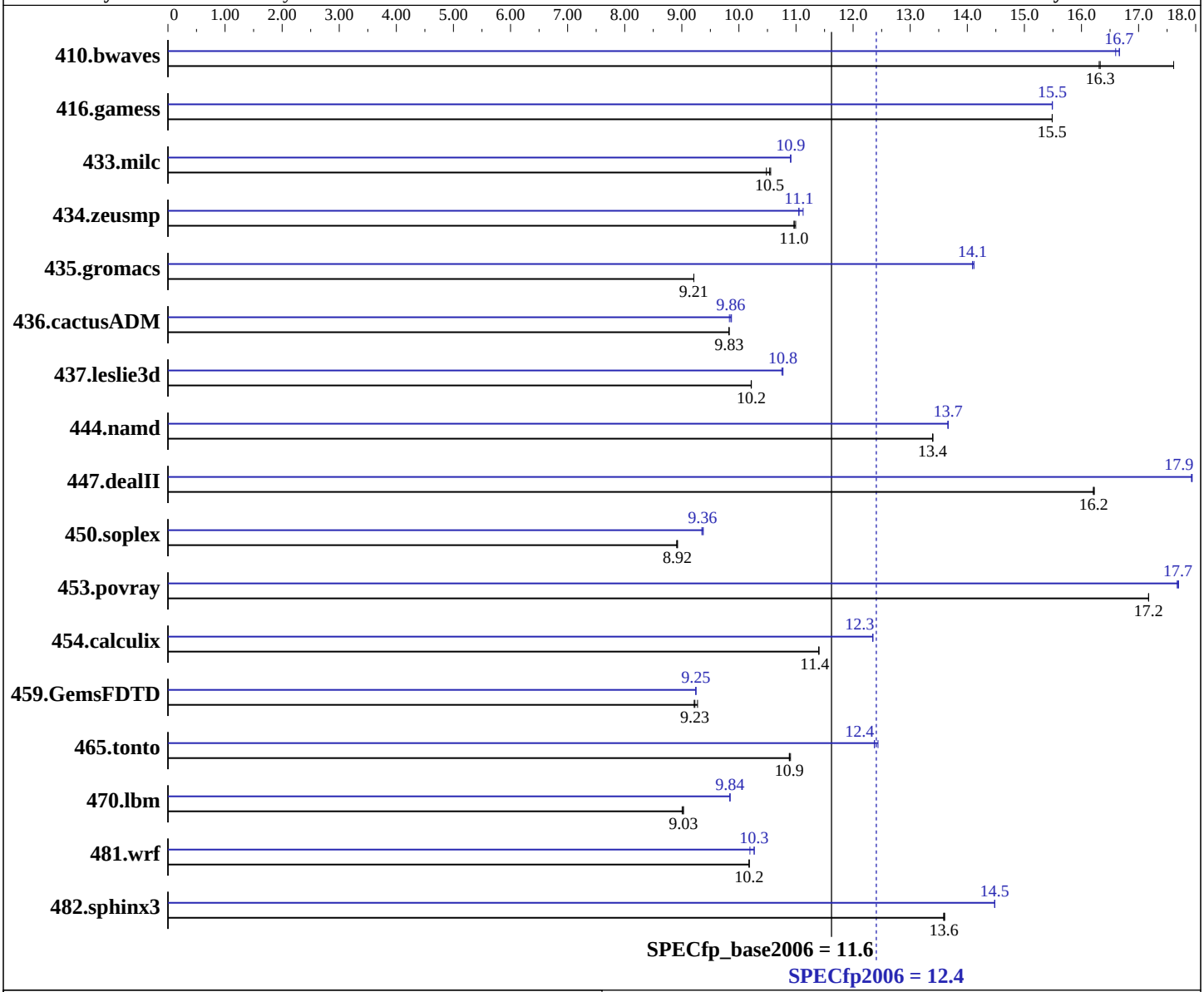
Sun Microsystems
Sun Fire X2100

SPECfp®2006 = 12.4

SPECfp_base2006 = 11.6

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

Test date: Apr-2006
Hardware Availability: May-2006
Software Availability: Jul-2006



Hardware

CPU Name:	AMD Opteron 156
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	1 core, 1 chip, 1 core/chip
CPU(s) orderable:	1 chip
Primary Cache:	64 KB I + 64 KB D on chip per chip
Secondary Cache:	1 MB I+D on chip per chip

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Software

Operating System:	Solaris 10 1/06
Compiler:	Sun Studio 11 with patch 120759-06
Auto Parallel:	No
File System:	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: 4 GB (4x1 GB, PC3200 CL3 ECC)
Disk Subsystem: SATA,80GB,10K RPM
Other Hardware: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	772	17.6	**832**	**16.3**	833	16.3	819	16.6	816	16.7	**816**	**16.7**
416.gamess	1264	15.5	1264	15.5	**1264**	**15.5**	**1264**	**15.5**	1264	15.5	1264	15.5
433.milc	876	10.5	**871**	**10.5**	870	10.6	842	10.9	842	10.9	**842**	**10.9**
434.zeusmp	830	11.0	**830**	**11.0**	828	11.0	818	11.1	824	11.0	**823**	**11.1**
435.gromacs	775	9.21	**775**	**9.21**	775	9.21	**507**	**14.1**	507	14.1	506	14.1
436.cactusADM	1216	9.83	1216	9.82	**1216**	**9.83**	1215	9.83	**1212**	**9.86**	1211	9.87
437.leslie3d	920	10.2	920	10.2	**920**	**10.2**	874	10.8	873	10.8	**873**	**10.8**
444.namd	599	13.4	**599**	**13.4**	599	13.4	587	13.7	**587**	**13.7**	587	13.7
447.dealII	705	16.2	706	16.2	**706**	**16.2**	638	17.9	**638**	**17.9**	638	17.9
450.soplex	936	8.91	**935**	**8.92**	934	8.93	889	9.38	**891**	**9.36**	892	9.35
453.povray	310	17.2	310	17.2	**310**	**17.2**	301	17.7	301	17.7	**301**	**17.7**
454.calculix	**724**	**11.4**	724	11.4	724	11.4	668	12.3	668	12.3	**668**	**12.3**
459.GemsFDTD	1144	9.28	**1150**	**9.23**	1151	9.22	1148	9.25	**1148**	**9.25**	1148	9.25
465.tonto	902	10.9	**904**	**10.9**	904	10.9	791	12.4	795	12.4	**795**	**12.4**
470.lbm	1526	9.01	1522	9.03	**1522**	**9.03**	1396	9.84	**1396**	**9.84**	1396	9.84
481.wrf	1097	10.2	**1097**	**10.2**	1097	10.2	1096	10.2	1088	10.3	**1088**	**10.3**
482.sphinx3	**1434**	**13.6**	1435	13.6	1433	13.6	1346	14.5	1346	14.5	**1346**	**14.5**

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

Operating System Notes

```
ulimit -s 131072  (shell): increases stack


/etc/system parameters
   tune_t_fsflushr=1
      Controls how many seconds elapse between runs of the
      page flush daemon, fsflush.
   autoup=900
      Causes pages older than the listed number of seconds to
      be written by fsflush.
```

Platform Notes

```
Default BIOS settings were used.
```

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 -xipo=2 -xarch=amd64a

C++ benchmarks:
-fast -xipo=2 -xarch=amd64a -library=stlport4

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Base Optimization Flags (Continued)

Fortran benchmarks:
`-fast -xipo=2 -xarch=amd64a`

Benchmarks using both Fortran and C:
`-fast`(cc) `-fast`(f90) `-xipo=2 -xarch=amd64a`

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`
453.povray: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_WORDS_LITTLEENDIAN`

Peak Optimization Flags

C benchmarks:

433.milc: `-fast -xarch=amd64a -xipo=2 -xprefetch=auto -xprefetch_level=3 -xpagesize=2m`

470.lbm: `-fast -xarch=amd64a -xpagesize=2m -W2,-Ainline:inc=200 -W2,-Ainline:cs=500 -xprefetch_level=3`

482.sphinx3: `-fast -xarch=amd64a -xrestrict -xipo=2 -xprefetch=auto -xpagesize=2m -Wd,-iropt-prof -W2,-Ashort_ldst:ldld -W2,-Ainline:rs=50 -M /usr/lib/ld/map.bssalign`

C++ benchmarks:

444.namd: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xarch=amd64a -xipo=2 -library=stlport4`

447.dealII: `-fast -xarch=amd64a -xipo=2 -xvector -Qoption iropt -Abcopy -xalias_level -xrestrict -xregs=frameptr -library=stlport4`

450.soplex: `-fast -xipo=2 -xarch=sse2a -library=stlport4`

453.povray: `Same as 447.dealII`

Fortran benchmarks:

410.bwaves: `-fast -xarch=amd64a -unroll=5 -stackvar -xO4 -xipo=2 -xprefetch_level=3 -Qoption iropt -Rloop_dist`

416.gamess: `-fast -xarch=amd64a -xipo=2 -xprefetch_level=3`

434.zeusmp: `-fast -xarch=amd64a -xipo=2 -xregs=frameptr`

437.leslie3d: `-fast -xipo=2 -xarch=sse2a`

459.GemsFDTD: `-fast -xarch=amd64a -xipo=2 -xprefetch_level=3 -xpagesize=2m`

465.tonto: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xarch=amd64a -xipo=2 -xvector=lib -xalias -xdepend -lbsdmalloc`

Benchmarks using both Fortran and C:

435.gromacs: `-fast`(cc) `-fast`(f90) `-xipo=2 -xarch=amd64a -Wu,-fsimple=3 -Qoption ube -fsimple=3`

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Peak Optimization Flags (Continued)

436.cactusADM: `-fast`(cc) `-fast`(f90) `-xipo=2 -xarch=amd64a`

454.calculix: `-fast`(cc) `-fast`(f90) `-xarch=amd64a -xpagesize=2m -xprefetch=auto -xprefetch_level=3 -W2,-Ainline:inc=200 -W2,-Ainline:cs=500 -unroll=5 -stackvar -xO4 -xipo=2 -Qoption iropt -Rloop_dist`

481.wrf: `Same as 436.cactusADM`

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-Solaris-Studio-Opteron.20090715.02.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio-Opteron.20090715.02.xml`

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