SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Sun Microsystems
Sun Fire X4200

$SPECfp^{®}2006 =$ 12.4
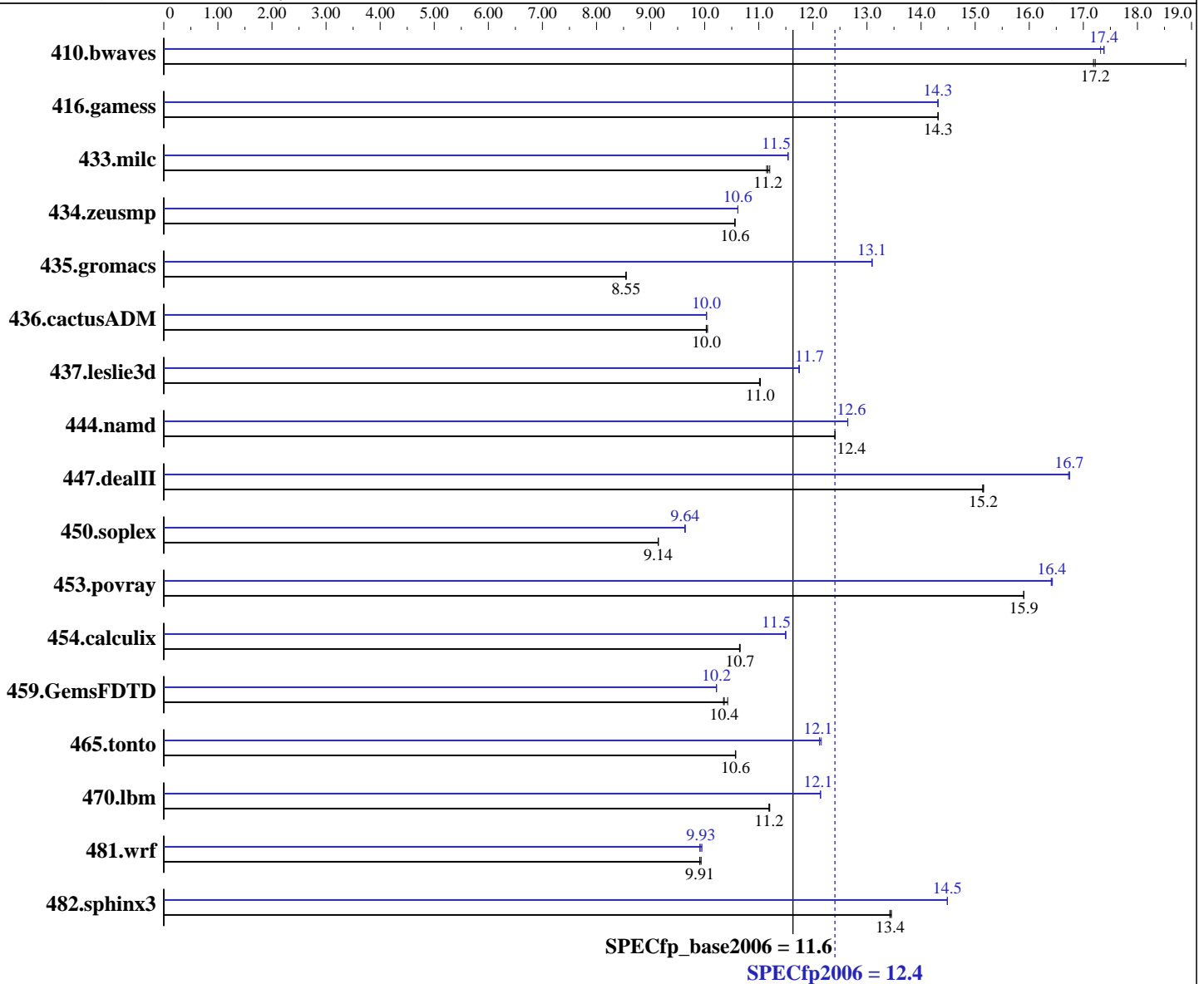
$SPECfp\_base2006 =$ 11.6

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

Test date: Apr-2006
Hardware Availability: Oct-2005
Software Availability: Jul-2006

Benchmark	Peak	Base
410.bwaves	17.4	17.2
416.gamess	14.3	14.3
433.milc	11.5	11.2
434.zeusmp	10.6	10.6
435.gromacs	13.1	8.55
436.cactusADM	10.0	10.0
437.leslie3d	11.7	11.0
444.namd	12.6	12.4
447.dealII	16.7	15.2
450.soplex	9.64	9.14
453.povray	16.4	15.9
454.calculix	11.5	10.7
459.GemsFDTD	10.2	10.4
465.tonto	12.1	10.6
470.lbm	12.1	11.2
481.wrf	9.93	9.91
482.sphinx3	14.5	13.4

SPECfp_base2006 = 11.6
SPECfp2006 = 12.4

Hardware
CPU Name: AMD Opteron 254
CPU Characteristics:
CPU MHz: 2800
FPU: Integrated
CPU(s) enabled: 1 core, 1 chip, 1 core/chip
CPU(s) orderable: 1-2 chips
Primary Cache: 64 KB I + 64 KB D on chip per chip
Secondary Cache: 1 MB I+D on chip per chip

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

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Sun Microsystems
Sun Fire X4200

$SPECfp2006 =$ 12.4

$SPECfp\_base2006 =$ 11.6

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

Test date: Apr-2006
Hardware Availability: Oct-2005
Software Availability: Jul-2006

L3 Cache:	None
Other Cache:	None
Memory:	8 GB (4x2 GB, PC3200 CL3 DDR ECC Reg)
Disk Subsystem:	SAS,36GB,10K RPM
Other Hardware:	None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	719	18.9	**789**	**17.2**	791	17.2	785	17.3	782	17.4	**782**	**17.4**
416.gamess	**1368**	**14.3**	1368	14.3	1368	14.3	1368	14.3	1368	14.3	**1368**	**14.3**
433.milc	824	11.1	**822**	**11.2**	819	11.2	795	11.5	795	11.5	**795**	**11.5**
434.zeusmp	862	10.6	862	10.6	**862**	**10.6**	857	10.6	857	10.6	**857**	**10.6**
435.gromacs	835	8.55	836	8.55	**835**	**8.55**	**545**	**13.1**	545	13.1	545	13.1
436.cactusADM	1189	10.1	1192	10.0	**1191**	**10.0**	**1191**	**10.0**	1191	10.0	1191	10.0
437.leslie3d	854	11.0	**852**	**11.0**	852	11.0	800	11.7	800	11.8	**800**	**11.7**
444.namd	**646**	**12.4**	646	12.4	646	12.4	**634**	**12.6**	634	12.6	634	12.6
447.dealII	755	15.2	**755**	**15.2**	756	15.1	**683**	**16.7**	684	16.7	683	16.7
450.soplex	913	9.14	912	9.14	**912**	**9.14**	866	9.63	**865**	**9.64**	865	9.64
453.povray	335	15.9	335	15.9	**335**	**15.9**	324	16.4	**324**	**16.4**	324	16.4
454.calculix	**774**	**10.7**	774	10.7	775	10.6	717	11.5	**718**	**11.5**	718	11.5
459.GemsFDTD	1018	10.4	**1024**	**10.4**	1025	10.3	**1038**	**10.2**	1038	10.2	1038	10.2
465.tonto	931	10.6	**931**	**10.6**	931	10.6	**812**	**12.1**	812	12.1	809	12.2
470.lbm	1227	11.2	**1228**	**11.2**	1228	11.2	1132	12.1	1132	12.1	**1132**	**12.1**
481.wrf	1124	9.93	**1127**	**9.91**	1127	9.91	1123	9.95	**1125**	**9.93**	1127	9.91
482.sphinx3	1449	13.5	1452	13.4	**1451**	**13.4**	1346	14.5	1345	14.5	**1345**	**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.
```

SPEC CFP2006 Result

Sun Microsystems

Sun Fire X4200

SPECfp2006 =	12.4
SPECfp_base2006 =	11.6

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

Test date: Apr-2006
Hardware Availability: Oct-2005
Software Availability: Jul-2006

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
```

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Sun Microsystems

Sun Fire X4200

$SPECfp2006 =$ 12.4

$SPECfp\_base2006 =$ 11.6

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
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

Sun Microsystems
Sun Fire X4200

$SPECfp2006 =$ 12.4

$SPECfp\_base2006 =$ 11.6

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

Test date: Apr-2006
Hardware Availability: Oct-2005
Software Availability: Jul-2006

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
```

Continued on next page

Sun Microsystems

Sun Fire X4200

$SPECfp2006 =$ **12.4**

$SPECfp\_base2006 =$ **11.6**

CPU2006 license:	6	**Test date:**	Apr-2006
Test sponsor:	Sun Microsystems	**Hardware Availability:**	Oct-2005
Tested by:	Sun Microsystems	**Software Availability:**	Jul-2006

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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v91.
Report generated on Tue Jul 22 10:02:19 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 24 August 2006.