# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Sun Microsystems

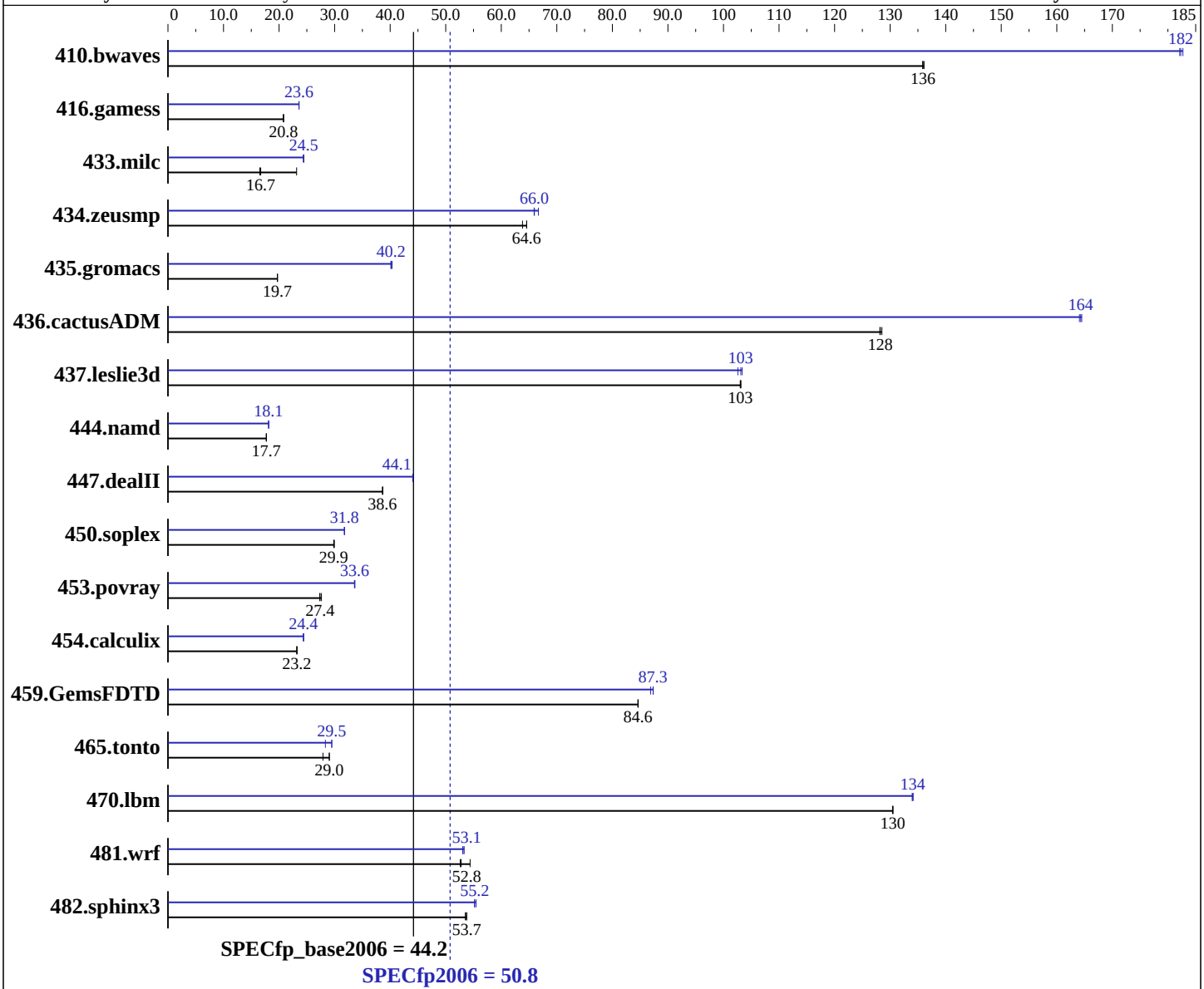
## Sun Blade X6275 (Intel Xeon X5570 2.93GHz)

SPECfp®2006 = 50.8

SPECfp_base2006 = 44.2

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

**Test date:** Jun-2009
**Hardware Availability:** Apr-2009
**Software Availability:** Jun-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon X5570 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.33 GHz |
| CPU MHz: | 2933 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip, 2 threads/core |
| CPU(s) orderable: | 1 or 2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 256 KB I+D on chip per core |

Continued on next page

### Software

| | |
|---|---|
| Operating System: | OpenSolaris 2009.06 |
| Compiler: | Sun Studio 12 Update 1 |
| Auto Parallel: | Yes |
| File System: | zfs |
| System State: | Default |
| Base Pointers: | 64-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | Apache C++ Standard Library V4.2.1 |

# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## Sun Microsystems

## Sun Blade X6275 (Intel Xeon X5570 2.93GHz)

SPECfp2006 = 50.8

SPECfp_base2006 = 44.2

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

**Test date:** Jun-2009
**Hardware Availability:** Apr-2009
**Software Availability:** Jun-2009

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB DDR3-1333)
Disk Subsystem: 1 x 24 GB, SAS, Sun FlashDisk
Other Hardware: None

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 100 | 136 | 99.9 | 136 | **100** | **136** | 74.6 | 182 | 74.4 | 183 | **74.5** | **182** |
| 416.gamess | 943 | 20.8 | 941 | 20.8 | **941** | **20.8** | **830** | **23.6** | 830 | 23.6 | 830 | 23.6 |
| 433.milc | **550** | **16.7** | 396 | 23.2 | 556 | 16.5 | **375** | **24.5** | 375 | 24.5 | 377 | 24.4 |
| 434.zeusmp | **141** | **64.6** | 141 | 64.6 | 143 | 63.8 | 136 | 66.7 | 138 | 65.9 | **138** | **66.0** |
| 435.gromacs | **362** | **19.7** | 362 | 19.7 | 362 | 19.7 | 178 | 40.1 | 177 | 40.4 | **178** | **40.2** |
| 436.cactusADM | 93.0 | 129 | **93.2** | **128** | 93.2 | 128 | 72.6 | 164 | 72.8 | 164 | **72.7** | **164** |
| 437.leslie3d | 91.1 | 103 | 91.2 | 103 | **91.2** | **103** | 90.9 | 103 | 91.6 | 103 | **91.2** | **103** |
| 444.namd | 453 | 17.7 | 453 | 17.7 | **453** | **17.7** | 442 | 18.1 | 443 | 18.1 | **442** | **18.1** |
| 447.dealII | 296 | 38.7 | **296** | **38.6** | 296 | 38.6 | 260 | 44.1 | **259** | **44.1** | 259 | 44.1 |
| 450.soplex | 278 | 30.0 | 279 | 29.8 | **279** | **29.9** | 263 | 31.7 | 262 | 31.8 | **262** | **31.8** |
| 453.povray | 195 | 27.3 | 193 | 27.6 | **194** | **27.4** | 158 | 33.6 | 158 | 33.6 | **158** | **33.6** |
| 454.calculix | 355 | 23.2 | 355 | 23.2 | **355** | **23.2** | **338** | **24.4** | 339 | 24.4 | 338 | 24.4 |
| 459.GemsFDTD | 125 | 84.7 | **125** | **84.6** | 125 | 84.6 | 122 | 86.9 | **121** | **87.3** | 121 | 87.4 |
| 465.tonto | 353 | 27.9 | 339 | 29.1 | **339** | **29.0** | 334 | 29.5 | **334** | **29.5** | 347 | 28.3 |
| 470.lbm | **105** | **130** | 105 | 131 | 105 | 130 | 102 | 134 | **102** | **134** | 103 | 134 |
| 481.wrf | 205 | 54.4 | 212 | 52.6 | **212** | **52.8** | 209 | 53.3 | 210 | 53.1 | **210** | **53.1** |
| 482.sphinx3 | 364 | 53.5 | 362 | 53.8 | **363** | **53.7** | 353 | 55.2 | **353** | **55.2** | 351 | 55.5 |

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

## Compiler Invocation Notes

```
The Apache C++ Standard Library V4.2.1 was installed from
http://stdcxx.apache.org/download.html using:
    alias gmake=specmake
    gmake BUILDTYPE=8D CONFIG=sunpro.config
```

## Operating System Notes

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

/etc/system parameters
   tune_t_fsflushr=10
   autoup=900
```

## Platform Notes

```
 AMIBIOS Build Date 1/26/09 ID 07.01.36.00
   Default BIOS settings used except:
   Intel VT-d: Disabled.  VT-d, if enabled, supports
   remapping of I/O DMA transfers for virtualization.
```

## General Notes

```
Environment variables set by runspec before the start of the run:
OMP_NUM_THREADS = "8"
SUNW_MP_PROCBIND = "true"
SUNW_MP_THR_IDLE = "SPIN"

447.dealII (peak): "apache_stdcxx_4_2_1" src.alt was used.

447.dealII (base): "apache_stdcxx_4_2_1" src.alt was 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

Continued on next page

## Base Portability Flags (Continued)

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 -m64 -xvector=simd -xautopar

C++ benchmarks:
-fast -xipo=2 -m64 -xvector=simd -library=no%Cstd
-I/data1/stdcxx-4.2.1/include -I/data1/stdcxx-4.2.1/build/include
-L/data1/stdcxx-4.2.1/build/lib -R/data1/stdcxx-4.2.1/build/lib -lstd8D

Fortran benchmarks:
-fast -xipo=2 -m64 -xvector=simd -xautopar

Benchmarks using both Fortran and C:
-fast(cc) -xipo=2 -m64 -xvector=simd -xautopar -fast(f90)

## Base Other Flags

C benchmarks:
-V -# -xjobs=16

C++ benchmarks:
-verbose=diags,version -xjobs=16

Fortran benchmarks:
-V -v -xjobs=16

Benchmarks using both Fortran and C:
-V -# -xjobs=16 -v

## Peak Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Continued on next page

## Peak Compiler Invocation (Continued)

Fortran benchmarks:
f90

Benchmarks using both Fortran and C:
cc f90

## Peak Portability Flags

436.cactusADM: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_WORDS_LITTLEENDIAN

## Peak Optimization Flags

C benchmarks:

433.milc: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=2M

470.lbm: -fast -xipo=2 -m64 -xvector=simd -xautopar -xreduction
-L/data1/SmartHeap_9/lib -R/data1/SmartHeap_9/lib -lsmartheap_mt64
-lmvec

482.sphinx3: -fast -xipo=2 -m64 -xpagesize=2M -xvector=simd
-xprefetch=no%auto -xautopar -xreduction

C++ benchmarks:

444.namd: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xunroll=8 -library=stlport4

447.dealII: -fast -xipo=1 -m64 -xpagesize=2M -xalias_level=compatible
-xdepend -library=no%Cstd -I/data1/stdcxx-4.2.1/include
-I/data1/stdcxx-4.2.1/build/include
-L/data1/stdcxx-4.2.1/build/lib
-R/data1/stdcxx-4.2.1/build/lib -lstd8D

450.soplex: -fast -xipo=2 -xpagesize=2M -xrestrict
-xalias_level=simple -xprefetch=no%auto -xdepend
-library=stlport4

453.povray: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xalias_level=compatible -library=stlport4

Continued on next page

## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xprefetch=no%auto -xautopar -xreduction

416.gamess: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xunroll=1 -qoption iropt -Ainline:cp=19
-qoption iropt -Ainline:rs=50 -qoption iropt -Ainline:irs=30

434.zeusmp: -fast -xipo=2 -m64 -xvector=simd -xautopar -xreduction

437.leslie3d: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xvector=simd -xautopar -xreduction -lumem

459.GemsFDTD: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -m64
-xpagesize=2M -xvector=simd -xautopar -xreduction

465.tonto: -fast -xipo=2 -m64 -xpagesize=2M -xautopar -stackvar
-xreduction -xprefetch=no%auto -xvector=lib -xalias
-xdepend

Benchmarks using both Fortran and C:

435.gromacs: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xipo=2 -m64 -xpagesize=2M -fsimple=2
-Qoption ube -fsimple=3 -xprefetch=no%auto -xautopar
-xreduction

436.cactusADM: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xipo=2 -xaddr32=yes -m64 -xvector=simd -xautopar
-W2,-Aparallel:nthreads=16
-Qoption iropt -Aparallel:nthreads=16

454.calculix: -fast(cc) -fast(f90) -xipo=2 -m64 -xpagesize=2M
-xvector=simd

481.wrf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xipo=2 -m64 -xpagesize=2M -xvector=lib,simd
-xprefetch=no%auto -xautopar -xreduction

# Peak Other Flags

C benchmarks:
```
-V -# -xjobs=16
```

C++ benchmarks:
```
-verbose=diags,version -xjobs=16
```

Fortran benchmarks:
```
-V -v -xjobs=16
```

Benchmarks using both Fortran and C:
```
-V -# -xjobs=16 -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_64.20090710.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.xml


SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.


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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 02:28:26 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 July 2009.