SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sun Microsystems

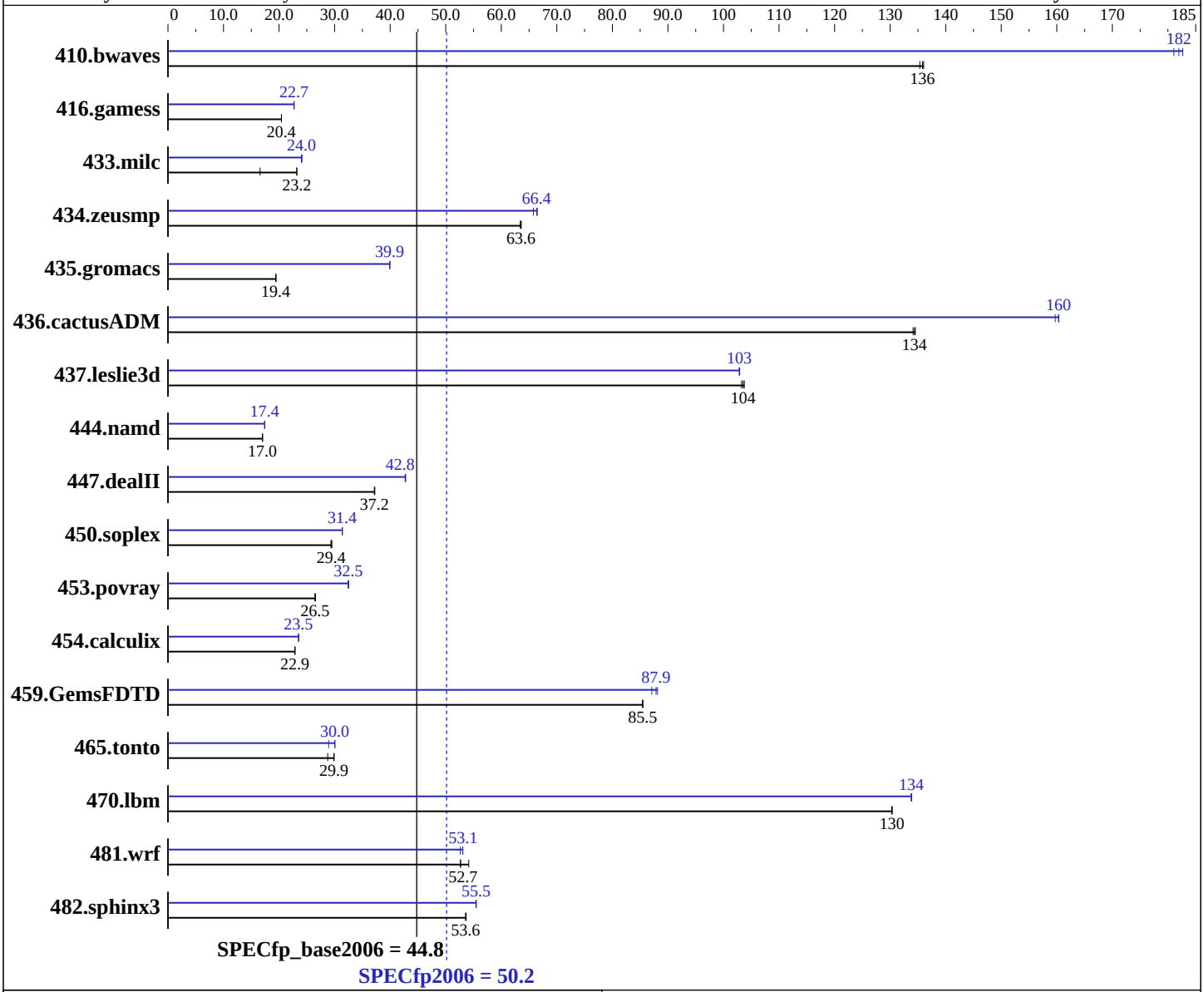
Sun Blade X6275 (Intel Xeon X5570 2.93GHz)

SPECfp®2006 = 50.2

SPECfp_base2006 = 44.8

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

Test date: Mar-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 2008.11
Compiler:	Sun Studio 12 Update 1 (backend build 20090309)
Auto Parallel:	Yes
File System:	zfs
System State:	Default
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Sun Microsystems

Sun Blade X6275 (Intel Xeon X5570 2.93GHz)

SPECfp2006 = 50.2

SPECfp_base2006 = 44.8

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

Test date: Mar-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

Other Software: MicroQuill SmartHeap Library 9.01 for x64
Apache C++ Standard Library V4.2.1

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	100	135	99.9	136	**100**	**136**	**74.7**	**182**	74.4	183	75.0	181
416.gamess	**959**	**20.4**	959	20.4	958	20.4	**863**	**22.7**	863	22.7	861	22.7
433.milc	396	23.2	**396**	**23.2**	553	16.6	382	24.0	380	24.1	**382**	**24.0**
434.zeusmp	**143**	**63.6**	143	63.6	143	63.4	**137**	**66.4**	137	66.5	138	65.8
435.gromacs	368	19.4	367	19.4	**368**	**19.4**	179	40.0	179	39.9	**179**	**39.9**
436.cactusADM	89.1	134	**88.9**	**134**	88.8	135	74.8	160	**74.5**	**160**	74.5	160
437.leslie3d	90.6	104	**90.8**	**104**	91.0	103	91.4	103	91.3	103	**91.4**	**103**
444.namd	471	17.0	471	17.0	**471**	**17.0**	**461**	**17.4**	460	17.4	461	17.4
447.dealII	**308**	**37.2**	307	37.2	308	37.2	268	42.7	**267**	**42.8**	267	42.8
450.soplex	284	29.3	283	29.5	**284**	**29.4**	266	31.4	266	31.4	**266**	**31.4**
453.povray	201	26.5	**201**	**26.5**	201	26.5	164	32.4	163	32.5	**164**	**32.5**
454.calculix	**361**	**22.9**	361	22.9	361	22.8	350	23.5	**351**	**23.5**	351	23.5
459.GemsFDTD	**124**	**85.5**	124	85.5	124	85.5	122	87.1	**121**	**87.9**	120	88.1
465.tonto	**329**	**29.9**	342	28.8	329	29.9	327	30.1	340	28.9	**328**	**30.0**
470.lbm	105	130	**105**	**130**	105	130	**103**	**134**	103	134	103	134
481.wrf	**212**	**52.7**	206	54.2	212	52.7	212	52.6	210	53.1	**210**	**53.1**
482.sphinx3	**364**	**53.6**	364	53.6	363	53.7	352	55.4	**351**	**55.5**	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
   set lpg_alloc_prefer=1
   set zfs:zfs_arc_max = 0x10000000
```

Platform Notes

```
Default BIOS settings used except:
Hyper-Threading Technology set to Enabled,
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
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64

Continued on next page

Base Portability Flags (Continued)

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

Fortran benchmarks:
f90

Continued on next page

Peak Compiler Invocation (Continued)

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=2 -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 -xdepend -xprefetch=no%auto
-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

Fortran benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

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 -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_64.20090710.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-OpenSolaris-Studio-x86_64.20090710.00.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 01:55:04 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 April 2009.