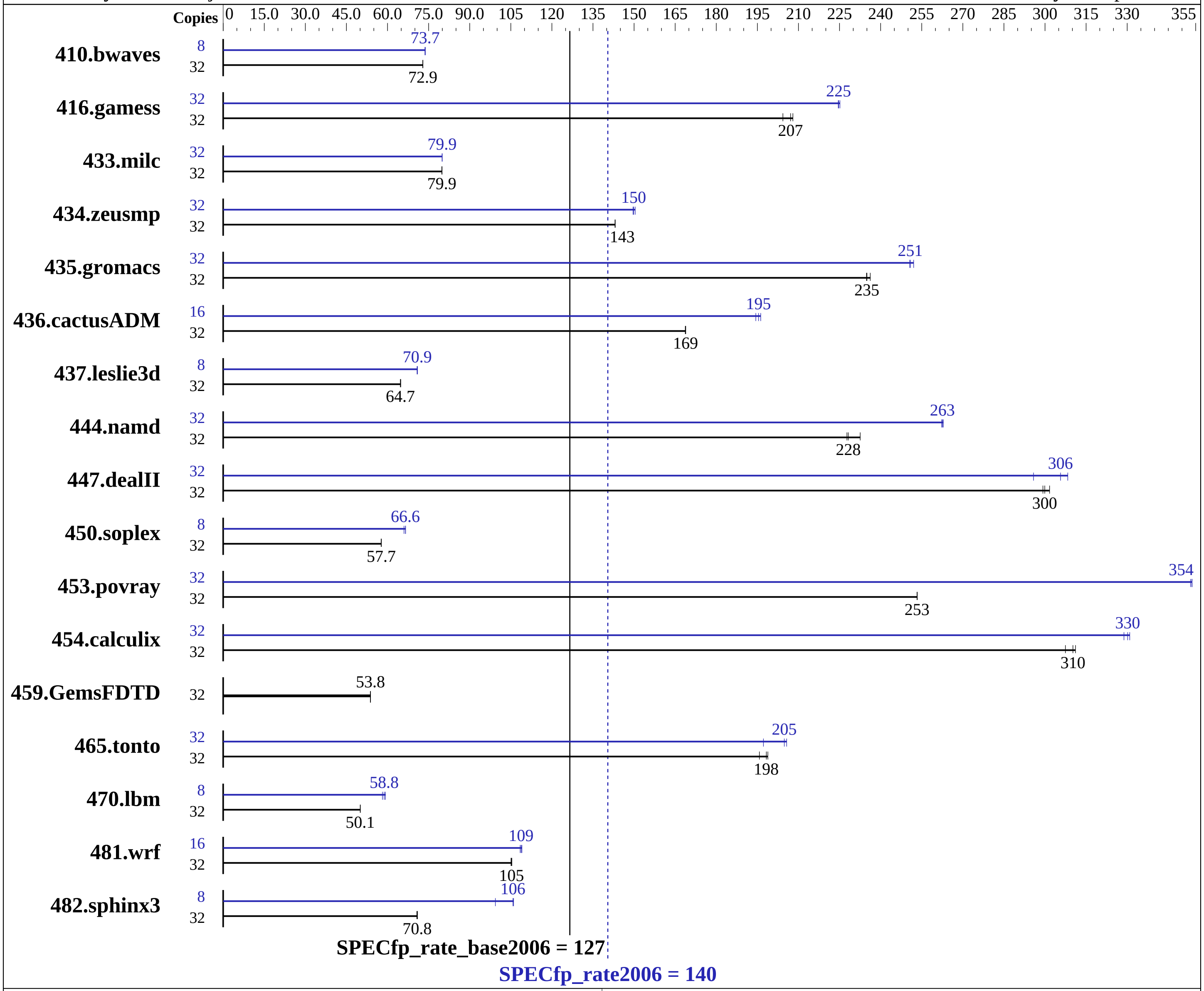
SPEC® CFP2006 Result

Fujitsu
SPARC Enterprise M4000

SPECfp®_rate2006 = 140

SPECfp_rate_base2006 = 127

CPU2006 license: 19		**Test date:**	Oct-2010
Test sponsor:	Fujitsu	**Hardware Availability:**	Dec-2010
Tested by:	Fujitsu	**Software Availability:**	Sep-2010



Hardware

CPU Name:	SPARC64 VII+
CPU Characteristics:	
CPU MHz:	2660
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 2 CPUMs; each CPUM contains 2 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	11 MB I+D on chip per chip

Continued on next page

Software

Operating System:	Oracle Solaris 10 9/10
Compiler:	Oracle Solaris Studio 12.2
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

Fujitsu
SPARC Enterprise M4000

SPECfp_rate2006 = 140
SPECfp_rate_base2006 = 127

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu
Test date: Oct-2010
Hardware Availability: Dec-2010
Software Availability: Sep-2010

L3 Cache: None
Other Cache: None
Memory: 128 GB (32 x 4 GB, 8-way interleaved)
Disk Subsystem: 1 x 300 GB 10,000 RPM SAS
Other Hardware: None

Results Table

	Base							Peak						
Benchmark	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Copies**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	32	5965	72.9	5964	72.9	**5965**	**72.9**	8	**1474**	**73.7**	1476	73.7	1473	73.8
416.gamess	32	3013	208	**3025**	**207**	3067	204	32	2790	225	**2789**	**225**	2783	225
433.milc	32	3679	79.8	3677	79.9	**3679**	**79.9**	32	3675	79.9	3674	80.0	**3675**	**79.9**
434.zeusmp	32	2035	143	**2035**	**143**	2036	143	32	1936	150	1946	150	**1943**	**150**
435.gromacs	32	**972**	**235**	967	236	973	235	32	906	252	912	251	**911**	**251**
436.cactusADM	32	**2265**	**169**	2267	169	2265	169	16	**978**	**195**	983	194	974	196
437.leslie3d	32	4640	64.8	**4647**	**64.7**	4649	64.7	8	**1061**	**70.9**	1060	70.9	1062	70.8
444.namd	32	1127	228	**1125**	**228**	1104	233	32	976	263	**978**	**263**	978	262
447.dealII	32	**1221**	**300**	1223	299	1214	302	32	**1198**	**306**	1238	296	1187	308
450.soplex	32	**4625**	**57.7**	4622	57.7	4627	57.7	8	1011	66.0	**1002**	**66.6**	1002	66.6
453.povray	32	672	253	**672**	**253**	672	253	32	**481**	**354**	481	354	482	353
454.calculix	32	859	307	**851**	**310**	849	311	32	803	329	798	331	**800**	**330**
459.GemsFDTD	32	**6312**	**53.8**	6314	53.8	6312	53.8	32	**6312**	**53.8**	6314	53.8	6312	53.8
465.tonto	32	1609	196	1584	199	**1588**	**198**	32	1531	206	**1537**	**205**	1597	197
470.lbm	32	8786	50.0	8784	50.1	**8784**	**50.1**	8	**1870**	**58.8**	1890	58.1	1856	59.2
481.wrf	32	3392	105	3402	105	**3396**	**105**	16	1648	108	1639	109	**1643**	**109**
482.sphinx3	32	8821	70.7	8795	70.9	**8805**	**70.8**	8	**1474**	**106**	1471	106	1569	99.4

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

Compiler Invocation Notes

```
Oracle Solaris Studio 12.2 is distributed with mandatory OS patches
 118683-05  119963-20  120753-08
Oracle Solaris Studio 12.2 and patches are available at
 http://oracle.com/goto/solarisstudio

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
```

Submit Notes

```
Processes were assigned to specific processors using 'pbind'
commands.  The config file option 'submit' was used, along
with a list of processors in the 'BIND' variable, to generate
the pbind commands.  (For details, please see the config file.)
```

Operating System Notes

```
ulimit -s 131072 was used to allow the stack to grow
up to 131072 KB (aka 128 MB).  Note that saying "131072"
is preferable to "unlimited", because there is a tradeoff
between space for the stack vs. space for the heap.


System Tunables (/etc/system parameters):

tune_t_fsflushr=10
    Controls how many seconds elapse between runs of the
    page flush daemon, fsflush.
autoup=600
    Causes pages older than the listed number of seconds to
    be written by fsflush.

Other System Settings:

The webconsole service was turned off using
    svcadm disable webconsole
```

Platform Notes

```
Memory is 8-way interleaved by filling all slots with
the same capacity DIMMs.

This result is measured on a SPARC Enterprise M4000 server from
Fujitsu.  The SPARC Enterprise M4000 server from Oracle and from
Fujitsu are electrically equivalent.
```

General Notes

```
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 Optimization Flags

C benchmarks:
```
-fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3
```

C++ benchmarks:
```
-xdepend -fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xalias_level=compatible -xprefetch=latx:0.5 -library=no%Cstd
-I/mnt/spec//stdcxx-4.2.1/include
-I/mnt/spec//stdcxx-4.2.1/build/include
-L/mnt/spec//stdcxx-4.2.1/build/lib -R/mnt/spec//stdcxx-4.2.1/build/lib
-lstd8d
```

Fortran benchmarks:
```
-fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xprefetch_level=2
```

Benchmarks using both Fortran and C:
```
-fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M -xlinkopt
-xvector -xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -xprefetch_level=2
```

Base Other Flags

C benchmarks:
`-xjobs=32 -V -#`

C++ benchmarks:
`-xjobs=32 -verbose=diags,version`

Fortran benchmarks:
`-xjobs=32 -V -v`

Continued on next page

Base Other Flags (Continued)

Benchmarks using both Fortran and C:
-xjobs=32 -V -# -v

Peak Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Fortran benchmarks:
f90

Benchmarks using both Fortran and C:
cc f90

Peak Optimization Flags

C benchmarks:

433.milc: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xipo=2 -xarch=generic -fsimple=1 -W2,-Ainline:rs=400 -xalias_level=std -xprefetch_auto_type=indirect_array_access -xprefetch_level=2

470.lbm: -fast -xpagesize=4M -fma=fused -xipo=2 -xarch=generic -xvector -xunroll=8 -xprefetch=latx:2

482.sphinx3: -fast -xpagesize=4M -fma=fused -xalias_level=std -M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch_level=2 -xunroll=4 -xprefetch=latx:1.2 -ll2amm

C++ benchmarks:

444.namd: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xalias_level=compatible -library=stlport4 -xalias_level=any -xchip=generic -xunroll=2

447.dealII: -xdepend -fast -xpagesize=4M -fma=fused -xalias_level=compatible -library=no%Cstd -I/mnt/spec//stdcxx-4.2.1/include -I/mnt/spec//stdcxx-4.2.1/build/include -xipo=2 -xprefetch=latx:0.5 -L/mnt/spec//stdcxx-4.2.1/build/lib -R/mnt/spec//stdcxx-4.2.1/build/lib -lstd8d

Continued on next page

Peak Optimization Flags (Continued)

450.soplex: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -xprefetch_level=2 -xprefetch_auto_type=indirect_array_access -Qoption cg -Qlp-ol=1 -Qoption cg -Qlp-it=3 -Qoption cg -Qlp-imb=1 -Qoption iropt -Apf:pdl=3 -xalias_level=simple -xrestrict -library=stlport4

453.povray: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xalias_level=compatible -library=stlport4 -xO4 -xipo=2 -xprefetch=no%auto -xunroll=4 -xlinkopt=2 -lfast

Fortran benchmarks:

410.bwaves: -fast -xpagesize=4M -fma=fused -xipo=2 -xprefetch_level=2

416.gamess: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xipo=2 -xprefetch=no%auto -xO3

434.zeusmp: -fast -xpagesize=4M -fma=fused -xipo=2 -xprefetch=no%auto -xunroll=3 -ll2amm

437.leslie3d: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -M /usr/lib/ld/map.bssalign -xipo=2 -xprefetch_level=1 -xunroll=7 -ll2amm

459.GemsFDTD: basepeak = yes

465.tonto: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -fma=fused -xipo=2 -xprefetch=no%auto -xO4 -xunroll=3 -lfast

Benchmarks using both Fortran and C:

435.gromacs: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -xpagesize=4M -fma=fused -xipo=2 -xprefetch=no%auto -xchip=generic -xinline= -fsimple=0 -xunroll=3

436.cactusADM: -fast(cc) -fast(f90) -xpagesize=4M -fma=fused -xipo=2 -xprefetch=latx:0.7 -fsimple=1

454.calculix: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -xpagesize=4M -fma=fused -xipo=2 -xvector -xunroll=8 -xprefetch=latx:3 -xalias_level=std

Continued on next page

Fujitsu
SPARC Enterprise M4000

SPECfp_rate2006 = 140
SPECfp_rate_base2006 = 127

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu
Test date: Oct-2010
Hardware Availability: Dec-2010
Software Availability: Sep-2010

Peak Optimization Flags (Continued)

481.wrf: -fast(cc) -fast(f90) -xpagesize=4M -fma=fused -xalias_level=std -xipo=2 -xcache=generic -xunroll=5 -xprefetch=latx:2

Peak Other Flags

C benchmarks:
-xjobs=32 -V -#

C++ benchmarks:
-xjobs=32 -verbose=diags,version

Fortran benchmarks:
-xjobs=32 -V -v

Benchmarks using both Fortran and C:
-xjobs=32 -V -# -v

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.xml

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 13:40:17 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 21 December 2010.