SPEC® CFP2006 Result

Fujitsu

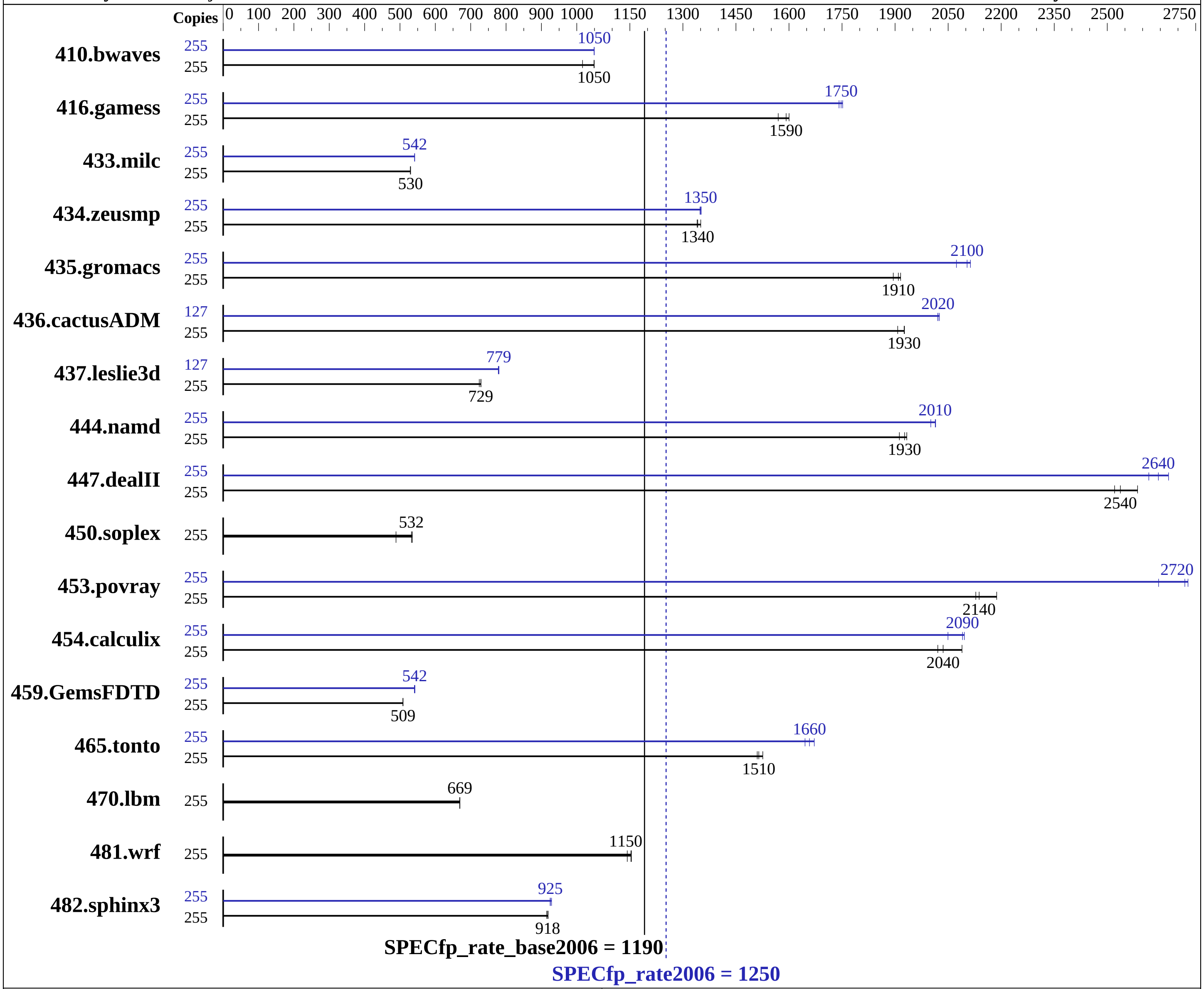
Fujitsu SPARC Enterprise M9000

SPECfp®_rate2006 = 1250

SPECfp_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Sep-2009
Hardware Availability: Nov-2009
Software Availability: Jun-2009



Hardware	
CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2880
FPU:	Integrated
CPU(s) enabled:	128 cores, 32 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 8 CMUs; each CMU contains 2 or 4 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip

Continued on next page

Software	
Operating System:	Solaris 10 5/09 with patches 119963-13, 120753-06, 118683-03
Compiler:	Sun Studio 12 Update 1
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit

Continued on next page

SPEC CFP2006 Result

Fujitsu

Fujitsu SPARC Enterprise M9000

SPECfp_rate2006 = 1250

SPECfp_rate_base2006 = 1190

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Sep-2009
Hardware Availability: Nov-2009
Software Availability: Jun-2009

L3 Cache:	None
Other Cache:	None
Memory:	704 GB (160 x 2 GB + 96 x 4 GB), 8-way interleaved
Disk Subsystem:	1 x Seagate Savvio 10K.2 (146 GB 10,000 RPM SAS) 1700 GB RAID 0 Solaris Volume 12 x Seagate Savvio 10K.2 (146 GB 10,000 RPM SAS) Stripe interlace 2048 Kbytes
Other Hardware:	None

Other Software:	Apache C++ Standard Library V4.2.1

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	255	3410	1020	**3305**	**1050**	3303	1050	255	3302	1050	3303	1050	**3302**	**1050**
416.gamess	255	3181	1570	**3136**	**1590**	3120	1600	255	2867	1740	2850	1750	**2857**	**1750**
433.milc	255	**4419**	**530**	4422	529	4417	530	255	4322	542	4325	541	**4322**	**542**
434.zeusmp	255	1718	1350	1731	1340	**1729**	**1340**	255	1721	1350	1717	1350	**1719**	**1350**
435.gromacs	255	950	1920	961	1890	**954**	**1910**	255	**865**	**2100**	862	2110	878	2070
436.cactusADM	255	**1583**	**1930**	1582	1930	1598	1910	127	**751**	**2020**	751	2020	749	2030
437.leslie3d	255	3310	724	3288	729	**3290**	**729**	127	1534	778	**1532**	**779**	1531	780
444.namd	255	**1061**	**1930**	1058	1930	1070	1910	255	1015	2010	1022	2000	**1016**	**2010**
447.dealII	255	1128	2590	**1150**	**2540**	1157	2520	255	1114	2620	1091	2670	**1103**	**2640**
450.soplex	255	4351	489	**3994**	**532**	3976	535	255	4351	489	**3994**	**532**	3976	535
453.povray	255	637	2130	**635**	**2140**	620	2190	255	497	2730	513	2650	**499**	**2720**
454.calculix	255	**1033**	**2040**	1041	2020	1007	2090	255	1004	2100	**1006**	**2090**	1026	2050
459.GemsFDTD	255	5321	508	5318	509	**5320**	**509**	255	5004	541	4990	542	**4995**	**542**
465.tonto	255	1644	1530	1662	1510	**1657**	**1510**	255	1501	1670	1525	1650	**1513**	**1660**
470.lbm	255	5238	669	**5235**	**669**	5234	669	255	5238	669	**5235**	**669**	5234	669
481.wrf	255	2493	1140	2468	1150	**2470**	**1150**	255	2493	1140	2468	1150	**2470**	**1150**
482.sphinx3	255	5434	915	**5415**	**918**	5409	919	255	5375	925	**5371**	**925**	5352	929

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

Compiler Invocation Notes

```
Sun Studio compiler patches are available at
   http://developers.sun.com/sunstudio/downloads/patches/ss12u1_patches.jsp

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

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

Operating System Notes

```
Shell Environments:

    ulimit -s 131072 was used to limit the space consumed
    by the stack.(making more space available for the heap)

System Tunables:
(/etc/system parameters)

    autoup=300
       Causes pages older than the listed number of seconds to
       be written by fsflush.
    bufhwm=40000000
       Memory byte limit for caching I/O buffers.
    lpg_alloc_prefer=1
       Set lgroup page allocation to strongly prefer local pages.

Other System Settings:

    The webconsole service was turned off using svcadm disable webconsole.

 The SPEC toolset was bound to processors 1-511 using processor sets:
       psrset -c 1-255
       psrset -e 1 ksh
```

Platform Notes

```
 Memory is 8-way interleaved by filling each CMU's slots with the same
 capacity DIMMs.

 This result is measured on a Fujitsu SPARC Enterprise M9000 Server.
 Note that the Fujitsu SPARC Enterprise M9000 and Sun SPARC Enterprise
 M9000 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 -xipo=2 -xpagesize=4M -fma=fused -xalias_level=std
-xprefetch_auto_type=indirect_array_access -xprefetch_level=1 -ll2amm
```

C++ benchmarks:
```
-xdepend -fast -xipo=2 -xpagesize=4M -fma=fused
-xalias_level=compatible -xprefetch_level=1 -library=no%Cstd
-I/export/cpu2006/stdcxx-4.2.1/include
-I/export/cpu2006/stdcxx-4.2.1/build/include -ll2amm
-L/export/cpu2006/stdcxx-4.2.1/build/lib
-R/export/cpu2006/stdcxx-4.2.1/build/lib -lstd8d
```

Fortran benchmarks:
```
-fast -xipo=2 -xpagesize=4M -fma=fused -xprefetch_level=2 -ll2amm
```

Benchmarks using both Fortran and C:
```
-fast(cc) -fast(f90) -xipo=2 -xpagesize=4M -fma=fused
-xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=1 -xprefetch_level=2 -ll2amm
```

Base Other Flags

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

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

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

Continued on next page

Base Other Flags (Continued)

Benchmarks using both Fortran and C:
`-xjobs=16 -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 -xipo=2
-xpagesize=4M -fma=fused -xprefetch_level=2
-xprefetch_auto_type=indirect_array_access -xalias_level=std
-fsimple=1

470.lbm: basepeak = yes

482.sphinx3: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=4M -fma=fused -lfast -ll2amm

C++ benchmarks:

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

447.dealII: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2
-xpagesize=4M -fma=fused -xalias_level=compatible
-library=no%Cstd -I/export/cpu2006/stdcxx-4.2.1/include
-I/export/cpu2006/stdcxx-4.2.1/build/include -xrestrict
-L/export/cpu2006/stdcxx-4.2.1/build/lib
-R/export/cpu2006/stdcxx-4.2.1/build/lib -lstd8d

Continued on next page

Peak Optimization Flags (Continued)

450.soplex: `basepeak = yes`

453.povray: `-xdepend -xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xipo=2 -xpagesize=4M -fma=fused -xalias_level=compatible -library=stlport4 -xprefetch=latx:6.0 -ll2amm`

Fortran benchmarks:

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

416.gamess: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xipo=2 -xpagesize=4M -fma=fused -xipo=1 -xprefetch_level=1`

434.zeusmp: `-fast -xipo=2 -xpagesize=4M -fma=fused -lmopt -ll2amm`

437.leslie3d: `-fast -xipo=2 -xpagesize=4M -fma=fused -xprefetch=latx:5.0 -ll2amm`

459.GemsFDTD: `-fast -xipo=2 -xpagesize=4M -fma=fused -fsimple=1 -xprefetch=no`

465.tonto: `-fast -xipo=2 -xpagesize=4M -fma=fused -xprefetch=no -lfast -ll2amm`

Benchmarks using both Fortran and C:

435.gromacs: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast`(cc) `-fast`(f90) `-xipo=2 -xpagesize=4M -fma=fused`

436.cactusADM: `-fast`(cc) `-fast`(f90) `-xipo=2 -xpagesize=4M -fma=fused`

454.calculix: `-fast`(cc) `-fast`(f90) `-xipo=2 -xpagesize=4M -fma=fused -xvector -xprefetch_level=1`

481.wrf: `basepeak = yes`

Peak Other Flags

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

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

Continued on next page

Peak Other Flags (Continued)

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

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

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r4.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r4.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 04:22:39 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 28 October 2009.