SPEC® CFP2006 Result

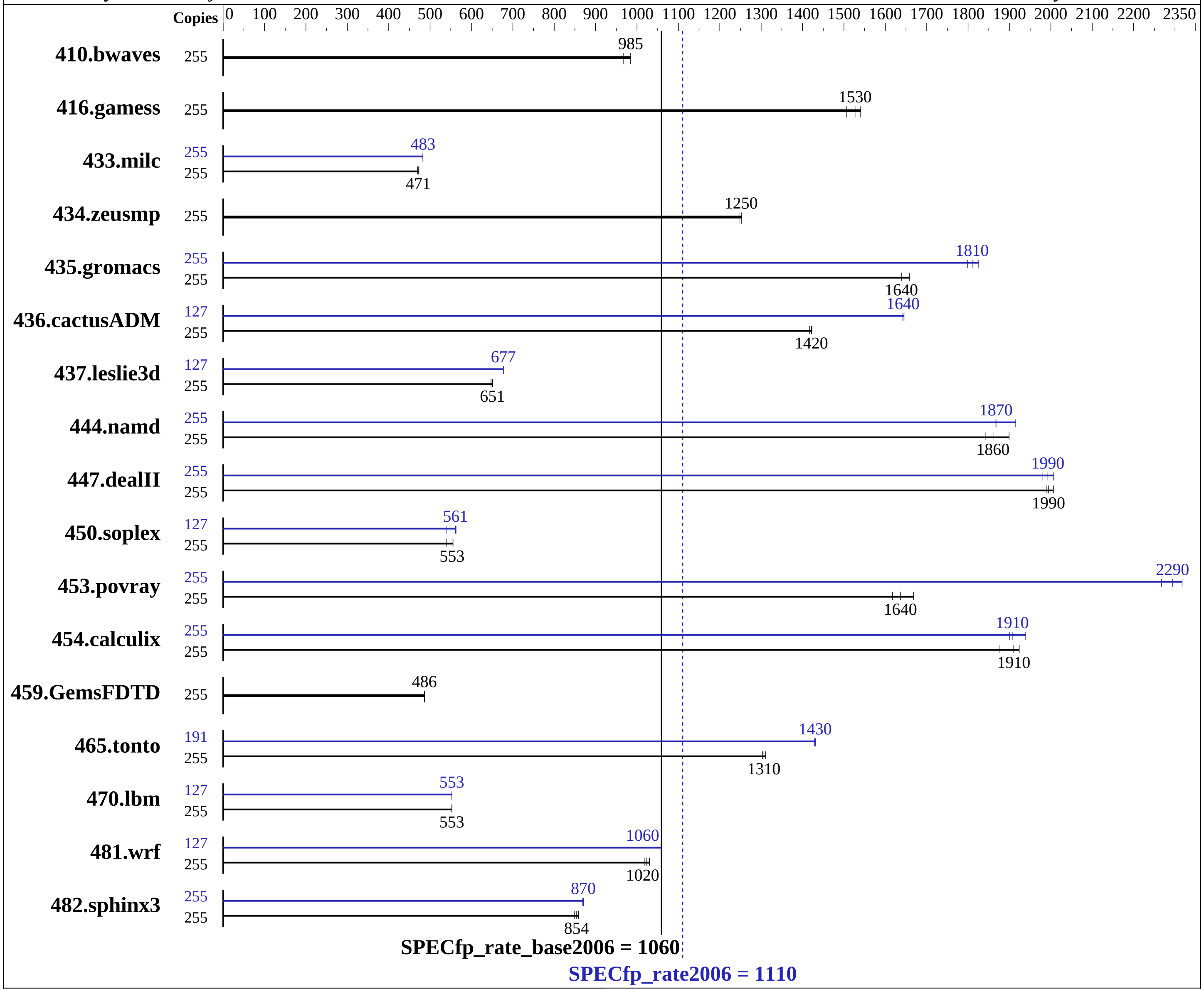
Fujitsu Limited

Fujitsu SPARC Enterprise M9000

SPECfp®_rate2006 = 1110

SPECfp_rate_base2006 = 1060

CPU2006 license: 19		**Test date:**	Jul-2008
Test sponsor:	Fujitsu Limited	**Hardware Availability:**	Jul-2008
Tested by:	Fujitsu Limited	**Software Availability:**	Jul-2008



Hardware

CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2520
FPU:	Integrated
CPU(s) enabled:	128 cores, 32 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 16 CMUs; each CMU contains 2 or 4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip

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Software

Operating System:	Solaris 10 5/08 with Patch 137111-03
Compiler:	Sun Studio 12 with patches 124867-06, 124861-07, 124863-05, 127000-05 (see patch information below)
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit

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L3 Cache: None
Other Cache: None
Memory: 512 GB (256 x 2 GB)
Disk Subsystem: OS disk: 1 x 72 GB 10000 RPM disk Seagate Savvio EX.disk: 864 GB RAID 0 Solaris Volume
12 x 72 GB 10000 RPM disk
Stripe interlace size 786 blocks
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	255	3585	967	**3519**	**985**	3518	985	255	3585	967	**3519**	**985**	3518	985
416.gamess	255	3241	1540	**3270**	**1530**	3316	1510	255	3241	1540	**3270**	**1530**	3316	1510
433.milc	255	**4966**	**471**	4982	470	4949	473	255	**4849**	**483**	4848	483	4849	483
434.zeusmp	255	1852	1250	**1854**	**1250**	1862	1250	255	1852	1250	**1854**	**1250**	1862	1250
435.gromacs	255	1098	1660	1111	1640	**1111**	**1640**	255	1012	1800	997	1830	**1006**	**1810**
436.cactusADM	255	2142	1420	2151	1420	**2144**	**1420**	127	925	1640	**924**	**1640**	922	1650
437.leslie3d	255	3679	651	3703	647	**3684**	**651**	127	1763	677	1763	677	**1763**	**677**
444.namd	255	1111	1840	**1099**	**1860**	1077	1900	255	1096	1870	**1095**	**1870**	1068	1920
447.dealII	255	**1463**	**1990**	1467	1990	1454	2010	255	**1464**	**1990**	1474	1980	1454	2010
450.soplex	255	3946	539	**3844**	**553**	3829	555	127	1965	539	1882	563	**1888**	**561**
453.povray	255	839	1620	813	1670	**829**	**1640**	255	**591**	**2290**	598	2270	585	2320
454.calculix	255	**1101**	**1910**	1121	1880	1094	1920	255	1107	1900	**1103**	**1910**	1085	1940
459.GemsFDTD	255	5564	486	5563	486	**5564**	**486**	255	5564	486	5563	486	**5564**	**486**
465.tonto	255	1914	1310	**1920**	**1310**	1925	1300	191	**1314**	**1430**	1315	1430	1313	1430
470.lbm	255	**6339**	**553**	6338	553	6339	553	127	3157	553	3157	553	**3157**	**553**
481.wrf	255	2795	1020	**2786**	**1020**	2764	1030	127	1341	1060	**1341**	**1060**	1340	1060
482.sphinx3	255	**5819**	**854**	5789	858	5858	848	255	**5711**	**870**	5726	868	5707	871

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/ss12_patches.jsp
```

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.)
```

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Operating System Notes

```
Environment Variable Settings:
LD_PRELOAD=mpss.so.1:madv.so.1
MPSSHEAP=4MB
MPSSSTACK=4MB
       Requests system to use 4 MB pages when possible.
MADV access_lwp
       access_lwp requests that the next light weight process to touch
       the specified address range will access it most heavily.
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)
tune_t_fsflushr=4
         Controls how many seconds elapse between runs of the
         page flush daemon, fsflush.
autoup=1920
         Causes pages older than the listed number of seconds to
         be written by fsflush.
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
```

Platform Notes

Memory is 8-way interleaved by filling all slots with the same capacity DIMMs.
This result is measured on a Fujitsu SPARC Enterprise M9000 Server.
Note that the Sun SPARC Enterprise M9000 and Fujitsu SPARC Enterprise
M9000 are electrically equivalent.

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 -xprefetch_level=1 -xalias_level=std -fma=fused -ll2amm`

C++ benchmarks:
`-library=stlport4 -fast -xipo=2 -xpagesize=4M -xprefetch_level=1 -xalias_level=compatible -fma=fused -ll2amm`

Fortran benchmarks:
`-fast -xipo=2 -xpagesize=4M -xprefetch_level=1 -fma=fused -ll2amm`

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

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: `-fast -xipo=2 -xpagesize=4M -fma=fused -xalias_level=strong -xprefetch_auto_type=indirect_array_access -ll2amm`

470.lbm: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast -xrestrict -xipo=2 -xprefetch_level=2 -xarch=v8plusb -fma=fused -ll2amm`

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

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Peak Optimization Flags (Continued)

C++ benchmarks:

444.namd: -library=stlport4 -fast -xipo=2 -xpagesize=4M -fma=fused -xdepend -xalias_level=compatible -ll2amm

447.dealII: -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -xpagesize=4M -fma=fused -xdepend -xalias_level=compatible -xrestrict -ll2amm

450.soplex: -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -xpagesize=4M -fma=fused -xdepend -xalias_level=compatible -fsimple=0 -xrestrict -xprefetch=no -ll2amm

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

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

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

459.GemsFDTD: basepeak = yes

465.tonto: -fast -xipo=2 -xpagesize=4M -fma=fused -xprefetch_level=2 -xprefetch=latx:3 -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 -xinline= -fsimple=0 -xprefetch=no -xarch=generic -xchip=generic

436.cactusADM: -fast(cc) -fast(f90) -xipo=2 -xpagesize=4M -fma=fused -ll2amm

454.calculix: -fast(cc) -fast(f90) -xipo=2 -xpagesize=4M -fma=fused -xvector -xprefetch_level=3 -xprefetch=latx:8.0 -xalias_level=std -ll2amm

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Peak Optimization Flags (Continued)

481.wrf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-xipo=2 -xpagesize=4M -fma=fused -xprefetch_level=2
-xprefetch=latx:2 -ll2amm

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.xml

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

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