SPEC® CFP2006 Result

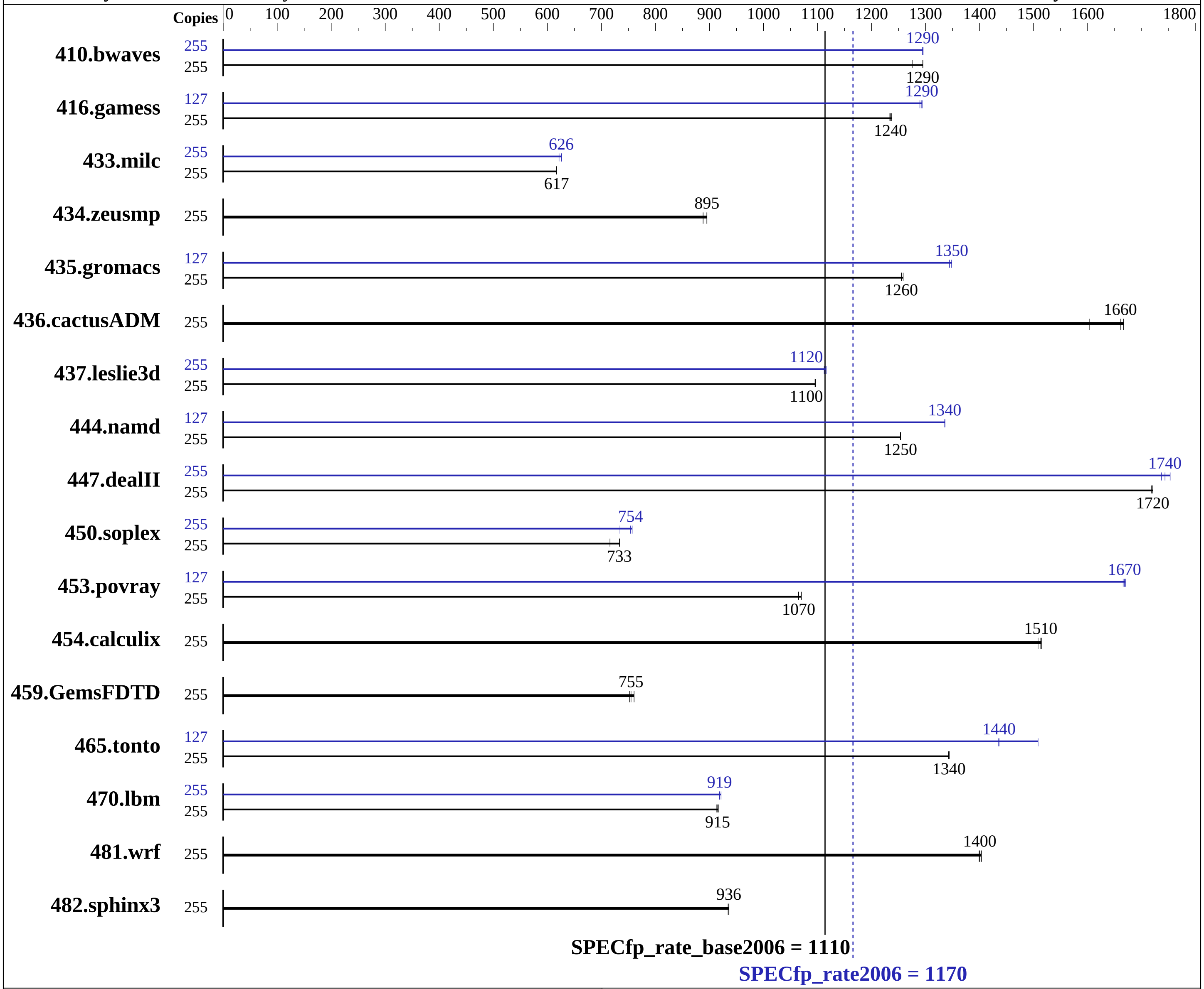
Fujitsu Limited

Fujitsu SPARC Enterprise M9000

SPECfp®_rate2006 = 1170

SPECfp_rate_base2006 = 1110

CPU2006 license:	19	**Test date:**	Mar-2007
Test sponsor:	Fujitsu Limited	**Hardware Availability:**	Apr-2007
Tested by:	Sun Microsystems	**Software Availability:**	Jul-2007



Hardware

CPU Name:	SPARC64 VI
CPU Characteristics:	
CPU MHz:	2280
FPU:	Integrated
CPU(s) enabled:	128 cores, 64 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 16 CMUs; each CMU contains 2 or 4 chips
Primary Cache:	128 KB I + 128 KB D on chip per core
Secondary Cache:	5 MB I+D on chip per chip

Continued on next page

Software

Operating System:	Solaris 10 7/07 (build s10s_u4wos_04)
Compiler:	Sun Studio 12 (build 44.0)
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

Fujitsu Limited

Fujitsu SPARC Enterprise M9000

SPECfp_rate2006 = 1170

SPECfp_rate_base2006 = 1110

CPU2006 license: 19
Test sponsor: Fujitsu Limited
Tested by: Sun Microsystems

Test date: Mar-2007
Hardware Availability: Apr-2007
Software Availability: Jul-2007

L3 Cache:	None
Other Cache:	None
Memory:	1 TB (512 x 2 GB)
Disk Subsystem:	673 GB RAID 1+0 created by Solaris Volume Manager with 20 x 73 GB 10,000 RPM Fujitsu MAY2073RC SAS
Other Hardware:	None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	255	2717	1280	**2676**	**1290**	2676	1290	255	2675	1300	**2676**	**1290**	2677	1290
416.gamess	255	**4041**	**1240**	4035	1240	4051	1230	127	1928	1290	1922	1290	**1923**	**1290**
433.milc	255	3794	617	3795	617	**3794**	**617**	255	3737	626	**3740**	**626**	3766	622
434.zeusmp	255	2612	888	**2592**	**895**	2592	895	255	2612	888	**2592**	**895**	2592	895
435.gromacs	255	1450	1260	1447	1260	**1450**	**1260**	127	**672**	**1350**	672	1350	675	1340
436.cactusADM	255	1900	1600	**1835**	**1660**	1828	1670	255	1900	1600	**1835**	**1660**	1828	1670
437.leslie3d	255	2188	1100	2186	1100	**2188**	**1100**	255	2148	1120	**2149**	**1120**	2155	1110
444.namd	255	1631	1250	**1631**	**1250**	1632	1250	127	762	1340	**763**	**1340**	763	1340
447.dealII	255	1698	1720	**1695**	**1720**	1695	1720	255	1664	1750	1680	1740	**1673**	**1740**
450.soplex	255	2970	716	**2899**	**733**	2897	734	255	2895	735	**2820**	**754**	2809	757
453.povray	255	**1273**	**1070**	1274	1060	1268	1070	127	406	1670	**405**	**1670**	405	1670
454.calculix	255	1395	1510	1389	1510	**1390**	**1510**	255	1395	1510	1389	1510	**1390**	**1510**
459.GemsFDTD	255	3596	752	3557	761	**3584**	**755**	255	3596	752	3557	761	**3584**	**755**
465.tonto	255	**1868**	**1340**	1869	1340	1867	1340	127	871	1430	829	1510	**870**	**1440**
470.lbm	255	3823	916	3835	914	**3828**	**915**	255	3802	922	**3813**	**919**	3814	919
481.wrf	255	2036	1400	**2034**	**1400**	2030	1400	255	2036	1400	**2034**	**1400**	2030	1400
482.sphinx3	255	5318	935	5309	936	**5309**	**936**	255	5318	935	5309	936	**5309**	**936**

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

Operating System Notes

```
Processes were bound to cores using "submit" and "pbind".
The SPEC toolset was bound to processor 0.

These shell commands request use of local 4MB pages:
      export LD_PRELOAD=madv.so.1:mpss.so.1
      export MPSSHEAP=4MB
      export MPSSSTACK=4MB
      export MADV=access_lwp
'access_lwp' means that the next light weight
process to touch the specified address range
will access it the most heavily.
```

Continued on next page

Operating System Notes (Continued)

```
ulimit -s 131072 was used to limit the space
consumed by the stack (and therefore make more
space available to the heap).

 /etc/system parameters
    autoup=300
       Causes pages older than the listed number of seconds to
       be written by fsflush.
    bufhwm=3000
       Memory byte limit for caching I/O buffers
    segmap_percent=1
       Set maximum percent memory for file system cache
    tune_t_fsflushr=3
       Controls how many seconds elapse between runs of the
       page flush daemon, fsflush.

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

Platform Notes

```
"CMU" = CPU/Memory Unit; each holds 2 or 4 CPU chips.

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

This result was measured using a Sun SPARC Enterprise
M9000 Server.  Note that the Fujitsu SPARC Enterprise
M9000 and Sun 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 -fma=fused -xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xprefetch=latx:2 -xalias_level=std
-xprefetch_level=3 -xprefetch_auto_type=indirect_array_access
```

C++ benchmarks:
```
-xdepend -library=stlport4 -fast -fma=fused
-xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M -xprefetch_level=2
-xprefetch=latx:2 -xalias_level=compatible
```

Fortran benchmarks:
```
-fast -fma=fused -xcache=128/64/2:5120/256/10 -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xprefetch=latx:2
```

Benchmarks using both Fortran and C:
```
-fast(cc) -fast(f90) -fma=fused -xcache=128/64/2:5120/256/10 -xipo=2
-xpagesize=4M -xprefetch_level=2 -xprefetch=latx:2 -xalias_level=std
-xprefetch_level=3 -xprefetch_auto_type=indirect_array_access
```

Base Other Flags

C benchmarks:
```
-xjobs=24 -V -#
```

C++ benchmarks:
```
-xjobs=24 -verbose=diags,version
```

Fortran benchmarks:
```
-xjobs=24 -V -v
```

Benchmarks using both Fortran and C:
```
-xjobs=24 -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: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2 -xprefetch_level=2 -fsimple=1 -xprefetch_auto_type=indirect_array_access -W2,-Ainline:rs=400 -xalias_level=std -fma=fused -xprefetch=latx:3

470.lbm: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xprefetch_level=3 -xipo=2 -xrestrict -fma=fused -Wc,-Qlp=1 -Wc,-Qlp-av=512 -Wc,-Qlp-t=1 -Wc,-Qlp-fa=1 -Wc,-Qms_pipe-prefolim=64 -xprefetch=latx:5

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xdepend -library=stlport4 -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xalias_level=compatible -xprefetch_level=1 -fma=fused -xprefetch=latx:3

447.dealII: -xdepend -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xalias_level=compatible -xipo=2 -xrestrict -fma=fused -xprefetch=latx:4.5

450.soplex: -xdepend -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xalias_level=compatible -xipo=2 -xprefetch_level=2 -fsimple=0 -xrestrict -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

453.povray: -xdepend -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xalias_level=compatible -xipo=2 -xrestrict -fma=fused

Fortran benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

410.bwaves: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2 -xprefetch_level=2 -fma=fused -xprefetch=latx:3

416.gamess: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2 -xprefetch_level=2 -fma=fused

434.zeusmp: basepeak = yes

437.leslie3d: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xprefetch_level=3 -qoption cg -Qlp=1 -qoption cg -Qlp-fa=0 -qoption cg -Qlp-fl=1 -qoption cg -Qlp-av=448 -qoption cg -Qlp-t=4 -xprefetch=latx:3.5

459.GemsFDTD: basepeak = yes

465.tonto: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2 -xprefetch=latx:12 -lfast

Benchmarks using both Fortran and C:

435.gromacs: -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -xcache=128/64/2:5120/256/10 -xpagesize=4M -xipo=2 -xinline= -xarch=generic -xchip=generic -fsimple=0 -fma=fused

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

Peak Other Flags

C benchmarks:
-xjobs=24 -V -#

C++ benchmarks:
-xjobs=24 -verbose=diags,version

Fortran benchmarks:
-xjobs=24 -V -v

Benchmarks using both Fortran and C:
-xjobs=24 -V -# -v

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.02.xml

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

Tested with SPEC CPU2006 v1.0.1.
Report generated on Tue Jul 22 11:15:34 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 May 2007.