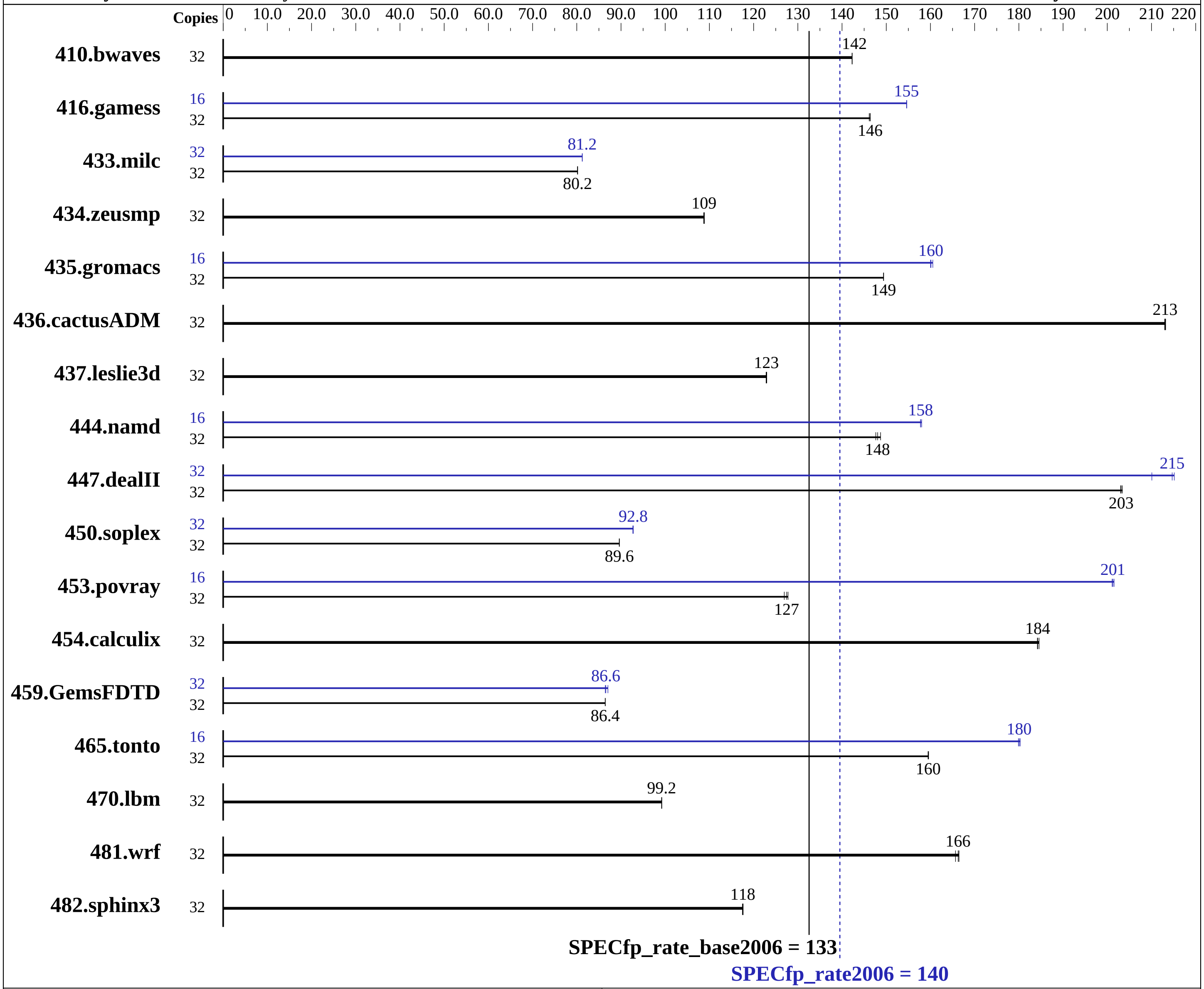
SPEC® CFP2006 Result

Sun Microsystems
Sun SPARC Enterprise M5000

SPECfp®_rate2006 = 140

SPECfp_rate_base2006 = 133

CPU2006 license:	6	**Test date:**	Apr-2007
Test sponsor:	Sun Microsystems	**Hardware Availability:**	Apr-2007
Tested by:	Sun Microsystems	**Software Availability:**	Jul-2007



Hardware

CPU Name:	SPARC64 VI
CPU Characteristics:	
CPU MHz:	2150
FPU:	Integrated
CPU(s) enabled:	16 cores, 8 chips, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 4 CPUM; each CPUM contains 2 CPU chips
Primary Cache:	128 KB I + 128 KB D on chip per core
Secondary Cache:	5 MB I+D on chip per chip

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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

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L3 Cache: None
Other Cache: None
Memory: 128 GB (64 x 2 GB)
Disk Subsystem: 73 GB FUJITSU MAY2073RC 10K RPM 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	32	3056	142	3057	142	**3057**	**142**	32	3056	142	3057	142	**3057**	**142**
416.gamess	32	4287	146	**4281**	**146**	4280	146	16	2026	155	**2026**	**155**	2026	155
433.milc	32	3663	80.2	**3665**	**80.2**	3665	80.2	32	3616	81.2	**3616**	**81.2**	3617	81.2
434.zeusmp	32	2675	109	**2676**	**109**	2679	109	32	2675	109	**2676**	**109**	2679	109
435.gromacs	32	1530	149	**1529**	**149**	1529	149	16	712	161	**713**	**160**	714	160
436.cactusADM	32	**1795**	**213**	1795	213	1794	213	32	**1795**	**213**	1795	213	1794	213
437.leslie3d	32	2446	123	**2448**	**123**	2449	123	32	2446	123	**2448**	**123**	2449	123
444.namd	32	1726	149	**1733**	**148**	1738	148	16	812	158	**813**	**158**	813	158
447.dealII	32	**1802**	**203**	1800	203	1803	203	32	1743	210	1701	215	**1705**	**215**
450.soplex	32	2977	89.6	**2978**	**89.6**	2979	89.6	32	**2877**	**92.8**	2877	92.8	2880	92.7
453.povray	32	**1335**	**127**	1332	128	1341	127	16	**423**	**201**	423	201	422	202
454.calculix	32	1430	185	1433	184	**1433**	**184**	32	1430	185	1433	184	**1433**	**184**
459.GemsFDTD	32	3928	86.4	**3928**	**86.4**	3929	86.4	32	3901	87.0	3928	86.4	**3922**	**86.6**
465.tonto	32	1973	160	1975	159	**1974**	**160**	16	**874**	**180**	875	180	873	180
470.lbm	32	4434	99.2	**4432**	**99.2**	4431	99.2	32	4434	99.2	**4432**	**99.2**	4431	99.2
481.wrf	32	2147	166	**2150**	**166**	2157	166	32	2147	166	**2150**	**166**	2157	166
482.sphinx3	32	**5304**	**118**	5310	117	5302	118	32	**5304**	**118**	5310	117	5302	118

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.

 ulimit -s 131072 was used to limit the space
```

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Operating System Notes (Continued)

```
consumed by the stack (and therefore make more
space available to the heap).

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

Platform Notes

```
"CPUM" = CPU Module; each module holds two CPU chips.

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

This result was measured using a Sun SPARC Enterprise
M5000 Server.  Note that the Fujitsu SPARC Enterprise
M5000 and Sun SPARC Enterprise M5000 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

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Base Optimization Flags (Continued)

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=12 -V -#

C++ benchmarks:
-xjobs=12 -verbose=diags,version

Fortran benchmarks:
-xjobs=12 -V -v

Benchmarks using both Fortran and C:
-xjobs=12 -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

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Peak Optimization Flags (Continued)

470.lbm: basepeak = yes

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:

410.bwaves: basepeak = yes

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: basepeak = yes

459.GemsFDTD: -fast -xcache=128/64/2:5120/256/10 -xpagesize=4M -fsimple=1
-xprefetch_level=2 -fma=fused -xprefetch=latx:2

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

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Peak Optimization Flags (Continued)

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=12 -V -#

C++ benchmarks:
-xjobs=12 -verbose=diags,version

Fortran benchmarks:
-xjobs=12 -V -v

Benchmarks using both Fortran and C:
-xjobs=12 -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.

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