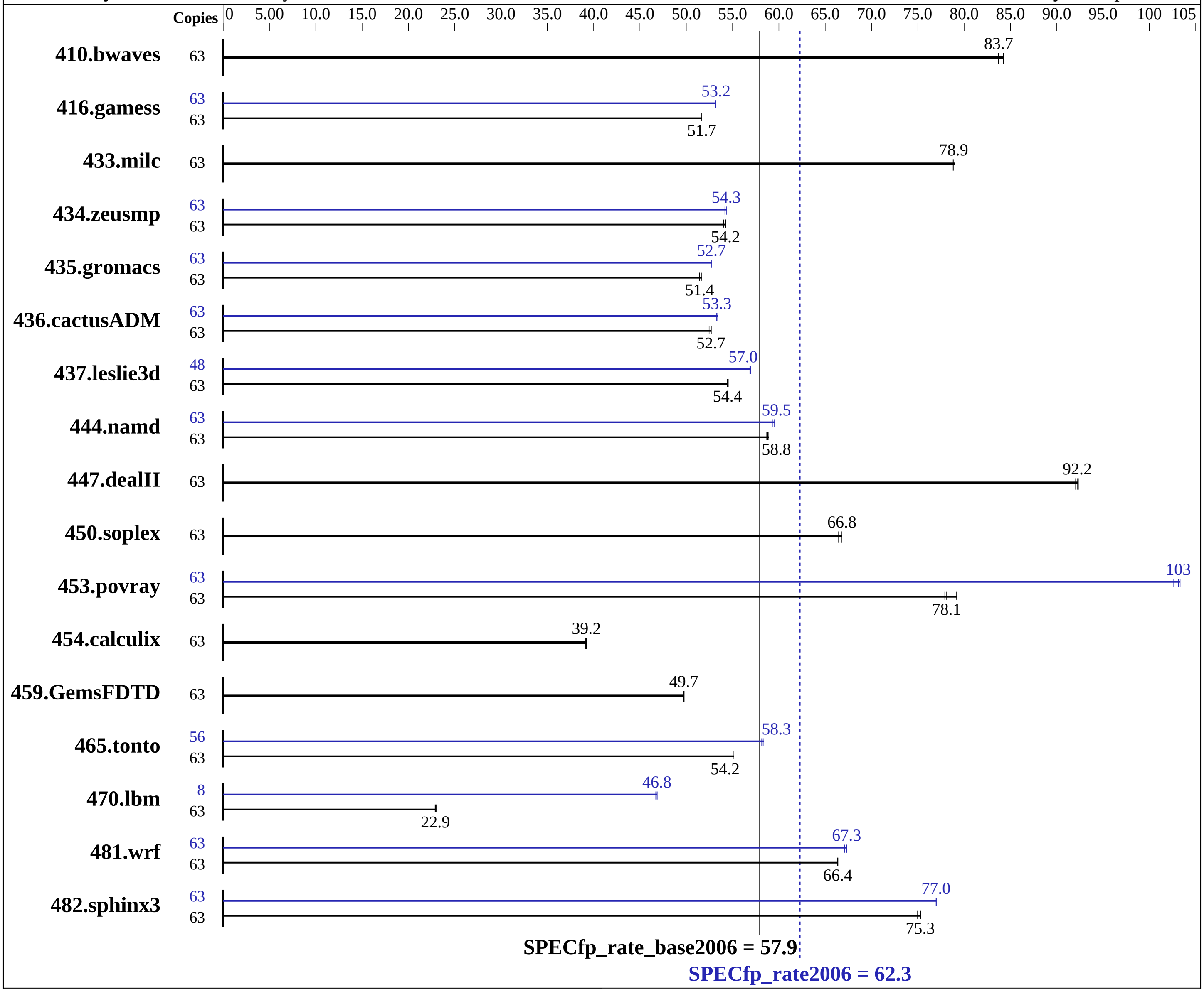
SPEC® CFP2006 Result

Fujitsu Limited
Fujitsu SPARC Enterprise T5220

SPECfp®_rate2006 = 62.3

SPECfp_rate_base2006 = 57.9

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



Hardware

CPU Name:	UltraSPARC T2
CPU Characteristics:	
CPU MHz:	1417
FPU:	Integrated
CPU(s) enabled:	8 cores, 1 chip, 8 cores/chip, 8 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	16 KB I + 8 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip

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Software

Operating System:	Solaris 10 8/07 (build s10s_u4wos_10)
Compiler:	Sun Studio 12 (build 2007/05/20)
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	None

L3 Cache:	None
Other Cache:	None
Memory:	64 GB (16 x 4 GB)
Disk Subsystem:	275 GB Solaris Volume Manager RAID 0, interlace 384KB, on 5 x SUN72G 10K RPM SAS disks; ufs fragment size 8192 bytes
Other Hardware:	None

Results Table

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	63	10163	84.2	**10226**	**83.7**	10228	83.7	63	10163	84.2	**10226**	**83.7**	10228	83.7
416.gamess	63	23870	51.7	23865	51.7	**23868**	**51.7**	63	23183	53.2	23195	53.2	**23185**	**53.2**
433.milc	63	7347	78.7	7320	79.0	**7333**	**78.9**	63	7347	78.7	7320	79.0	**7333**	**78.9**
434.zeusmp	63	10611	54.0	**10570**	**54.2**	10568	54.3	63	10544	54.4	**10554**	**54.3**	10584	54.2
435.gromacs	63	8746	51.4	**8743**	**51.4**	8706	51.7	63	8527	52.8	8542	52.7	**8534**	**52.7**
436.cactusADM	63	14284	52.7	**14295**	**52.7**	14349	52.5	63	**14122**	**53.3**	14129	53.3	14100	53.4
437.leslie3d	63	10876	54.4	**10876**	**54.4**	10859	54.5	48	7919	57.0	7935	56.9	**7921**	**57.0**
444.namd	63	8577	58.9	8618	58.6	**8596**	**58.8**	63	**8488**	**59.5**	8485	59.5	8512	59.4
447.dealII	63	**7816**	**92.2**	7831	92.0	7806	92.3	63	**7816**	**92.2**	7831	92.0	7806	92.3
450.soplex	63	7913	66.4	**7864**	**66.8**	7864	66.8	63	7913	66.4	**7864**	**66.8**	7864	66.8
453.povray	63	4233	79.2	4302	77.9	**4291**	**78.1**	63	3266	103	**3250**	**103**	3244	103
454.calculix	63	**13251**	**39.2**	13286	39.1	13241	39.3	63	**13251**	**39.2**	13286	39.1	13241	39.3
459.GemsFDTD	63	**13439**	**49.7**	13429	49.8	13443	49.7	63	**13439**	**49.7**	13429	49.8	13443	49.7
465.tonto	63	**11437**	**54.2**	11439	54.2	11242	55.1	56	9439	58.4	9477	58.1	**9453**	**58.3**
470.lbm	63	37983	22.8	37632	23.0	**37763**	**22.9**	8	2345	46.9	**2347**	**46.8**	2357	46.6
481.wrf	63	10601	66.4	**10603**	**66.4**	10608	66.3	63	10449	67.3	10488	67.1	**10453**	**67.3**
482.sphinx3	63	**16315**	**75.3**	16305	75.3	16387	74.9	63	15972	76.9	**15953**	**77.0**	15946	77.0

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".

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=600
       Causes pages older than the listed number of seconds to
       be written by fsflush.
```

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Operating System Notes (Continued)

```
      tune_t_fsflushr=10
         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

```
  This result was measured on a Sun SPARC Enterprise
  T5220.  All of these are electronically equivalent:
    - Sun SPARC Enterprise T5120
    - Sun SPARC Enterprise T5220
    - Fujitsu SPARC Enterprise T5120
    - Fujitsu SPARC Enterprise T5220
```

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:
```
-g -fast -xipo=2 -xpagesize=4M -xprefetch_level=2 -xalias_level=std
-xprefetch_level=3 -xprefetch_auto_type=indirect_array_access
```

C++ benchmarks:
```
-g0 -library=stlport4 -fast -xipo=2 -xpagesize=4M -xprefetch_level=2
-xdepend -xalias_level=compatible
```

Fortran benchmarks:
```
-g -fast -xipo=2 -xpagesize=4M -xprefetch_level=2
```

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

Base Other Flags

C benchmarks:
`-xjobs=16 -V`

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

Fortran benchmarks:
`-xjobs=16 -V`

Benchmarks using both Fortran and C:
`-xjobs=16 -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: `basepeak = yes`

470.lbm: `-g -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M`
`-xprefetch_level=3 -xipo=2 -xrestrict`

482.sphinx3: `-g -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M`
`-xinline= -xprefetch_level=2 -Wc,-Qlp-ol=1 -xrestrict`
`-xalias_level=strong -fsimple=1 -xlinkopt=2 -lfast`

C++ benchmarks:

444.namd: `-g0 -library=stlport4 -xprofile=collect:./feedback`(pass 1)
`-xprofile=use:./feedback`(pass 2) `-fast -xpagesize=4M`
`-xdepend -xalias_level=compatible -xprefetch_level=1`
`-xlinkopt=2`

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Peak Optimization Flags (Continued)

447.dealII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -g0 -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xdepend -xalias_level=compatible -xipo=2 -xrestrict -xlinkopt=2

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xpagesize=4M -xlinkopt=2

434.zeusmp: -g -fast -xpagesize=4M -xipo=1 -qoption cg -Qeps:enabled=1 -qoption cg -Qeps:ws=8 -lmopt

437.leslie3d: -g -fast -xpagesize_heap=4M -xpagesize_stack=64K -xprefetch_level=3 -xprefetch=latx:1.6 -qoption cg -Qlp=1 -qoption cg -Qlp-fa=0 -qoption cg -Qlp-fl=1 -qoption cg -Qlp-av=448 -qoption cg -Qlp-t=4

459.GemsFDTD: basepeak = yes

465.tonto: -g -fast -xpagesize=4M -xipo=2 -lfast

Benchmarks using both Fortran and C:

435.gromacs: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -xpagesize=4M -xipo=1 -xinline= -xarch=generic -xchip=generic -fsimple=0

436.cactusADM: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -xpagesize=4M -xipo=2 -fsimple=1 -xlinkopt=2

454.calculix: basepeak = yes

481.wrf: -g -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90) -xpagesize=4M -xlinkopt=2

Peak Other Flags

C benchmarks:
`-xjobs=16 -V`

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

Fortran benchmarks:
`-xjobs=16 -V`

Benchmarks using both Fortran and C:
`-xjobs=16 -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.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12.20090714.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 14:08:42 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 November 2007.