



SPEC[®] CFP2006 Result

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Fujitsu Limited

SPECfp[®]_rate2006 = 62.3

Fujitsu SPARC Enterprise T5220

SPECfp_rate_base2006 = 57.9

CPU2006 license: 19

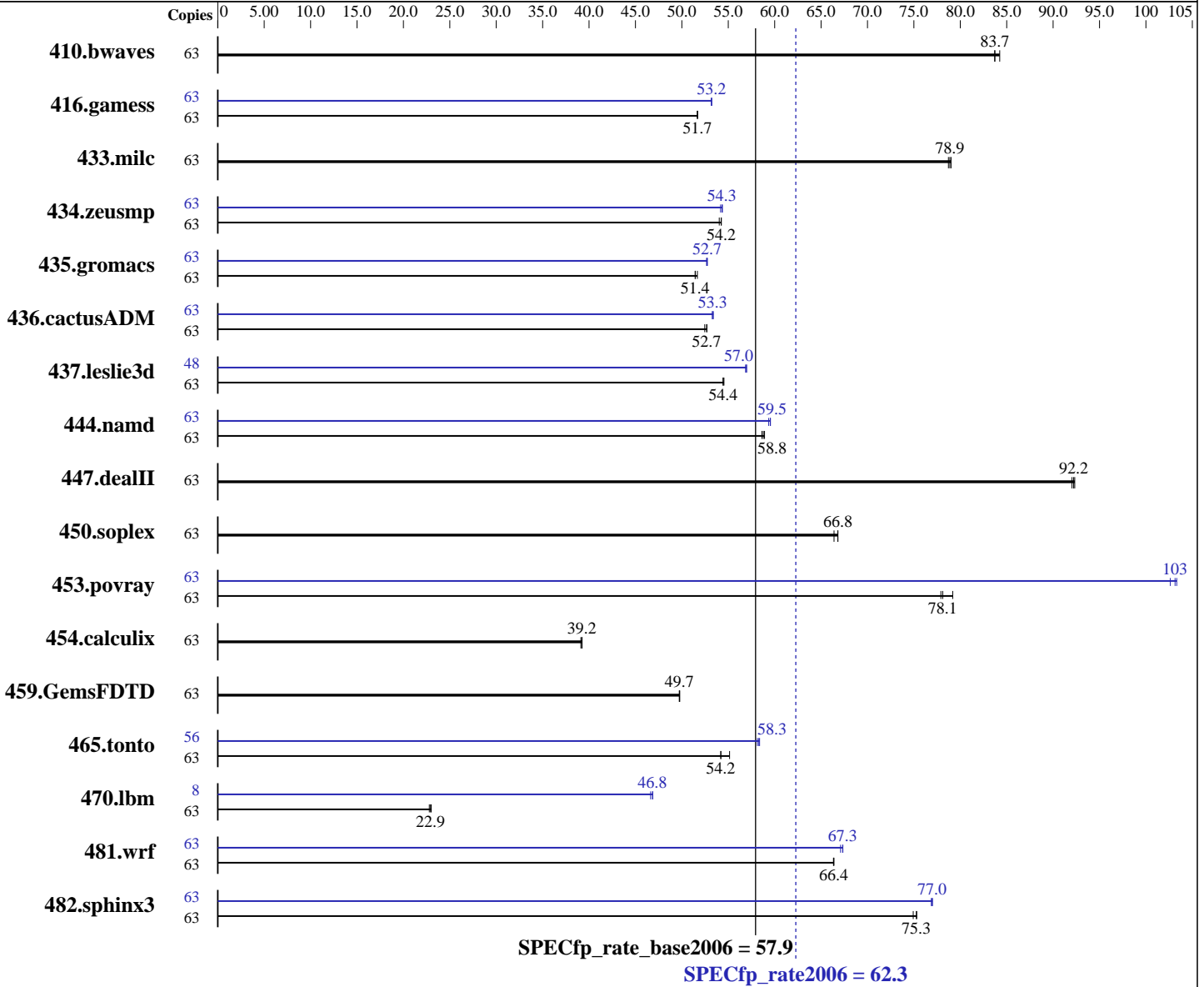
Test sponsor: Fujitsu Limited

Tested by: Sun Microsystems

Test date: Jul-2007

Hardware Availability: Oct-2007

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



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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

Benchmark	Base								Peak							
	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



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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



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Peak Other Flags

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-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>

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