



SPEC[®] CFP2006 Result

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Sun Microsystems

SPECfp[®]_rate2006 = 25.6

Sun SPARC Enterprise M3000

SPECfp_rate_base2006 = 24.4

CPU2006 license: 6

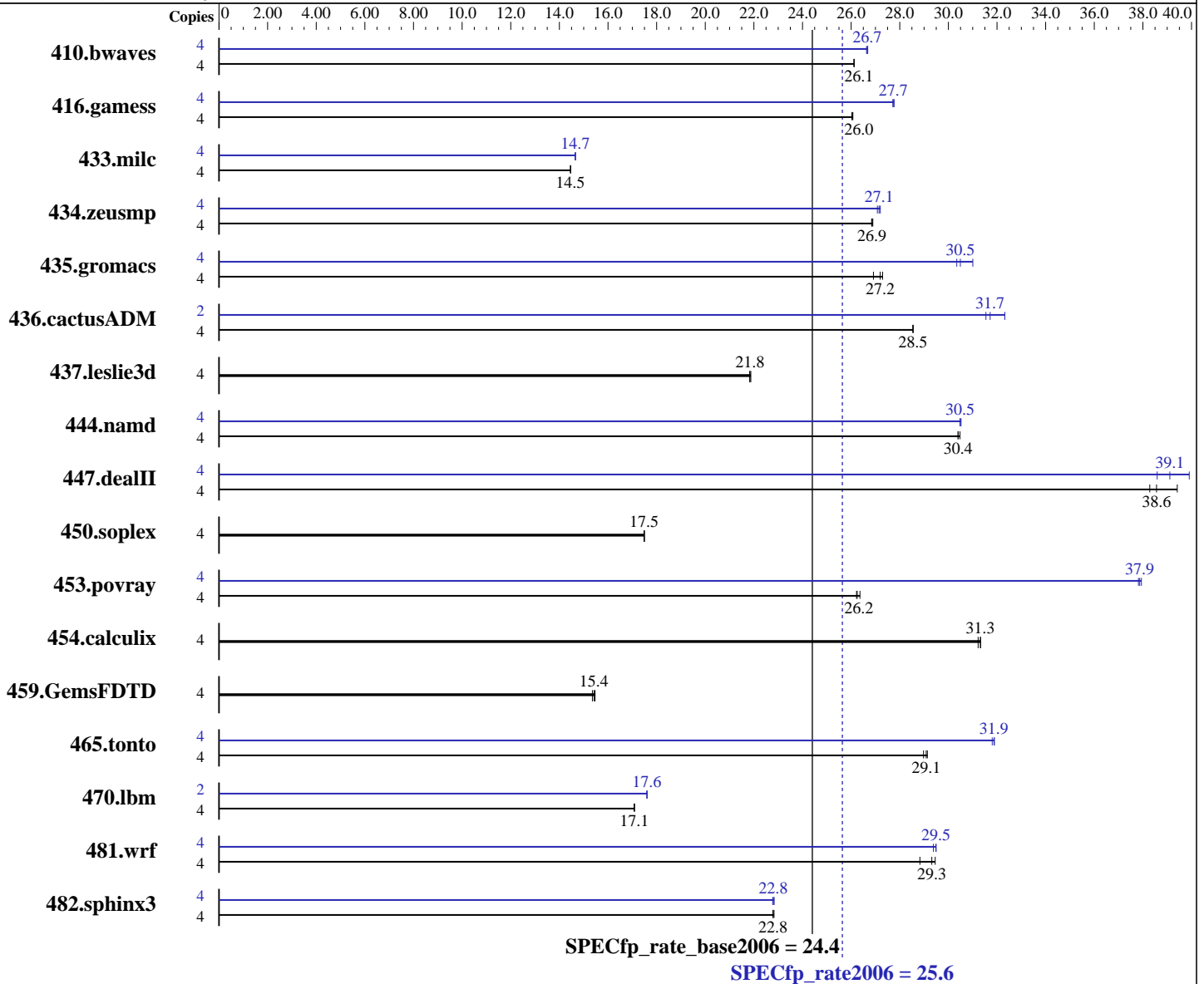
Test sponsor: Sun Microsystems

Tested by: Fujitsu Limited

Test date: Sep-2008

Hardware Availability: Jan-2009

Software Availability: Oct-2008



Hardware

CPU Name: SPARC64 VII
 CPU Characteristics: 2 Cores
 CPU MHz: 2520
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core
 CPU(s) orderable: 1 chip
 Primary Cache: 64 KB I + 64 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 10/08
 Compiler: Sun Studio 12 with patches
 124861-08, 124863-06, 124867-07, 127143-03,
 127000-05, 127001-01
 (see patch information below)
 Auto Parallel: No
 File System: ufs
 System State: Default
 Base Pointers: 32-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (2 GB x 8), 2-way interleaved
Disk Subsystem: 73 GB 10,000 RPM Fujitsu MAY2073RC SAS
Other Hardware: None

Peak Pointers: 32-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	<u>2081</u>	<u>26.1</u>	2081	26.1	2081	26.1	4	2041	26.6	2037	26.7	<u>2039</u>	<u>26.7</u>
416.gamess	4	<u>3008</u>	<u>26.0</u>	3008	26.0	3004	26.1	4	<u>2824</u>	<u>27.7</u>	2821	27.8	2826	27.7
433.milc	4	2540	14.5	2539	14.5	<u>2540</u>	<u>14.5</u>	4	<u>2506</u>	<u>14.7</u>	2504	14.7	2506	14.7
434.zeusmp	4	1354	26.9	<u>1355</u>	<u>26.9</u>	1356	26.8	4	1338	27.2	<u>1341</u>	<u>27.1</u>	1344	27.1
435.gromacs	4	1061	26.9	<u>1050</u>	<u>27.2</u>	1046	27.3	4	921	31.0	941	30.3	<u>937</u>	<u>30.5</u>
436.cactusADM	4	1674	28.5	<u>1675</u>	<u>28.5</u>	1675	28.5	2	758	31.5	<u>754</u>	<u>31.7</u>	739	32.3
437.leslie3d	4	<u>1722</u>	<u>21.8</u>	1719	21.9	1722	21.8	4	<u>1722</u>	<u>21.8</u>	1719	21.9	1722	21.8
444.namd	4	1053	30.5	<u>1055</u>	<u>30.4</u>	1055	30.4	4	1051	30.5	1052	30.5	<u>1052</u>	<u>30.5</u>
447.dealII	4	1195	38.3	1161	39.4	<u>1187</u>	<u>38.6</u>	4	1147	39.9	1186	38.6	<u>1170</u>	<u>39.1</u>
450.soplex	4	<u>1908</u>	<u>17.5</u>	1908	17.5	1907	17.5	4	<u>1908</u>	<u>17.5</u>	1908	17.5	1907	17.5
453.povray	4	812	26.2	807	26.4	<u>811</u>	<u>26.2</u>	4	563	37.8	<u>562</u>	<u>37.9</u>	561	37.9
454.calculix	4	1054	31.3	<u>1054</u>	<u>31.3</u>	1057	31.2	4	1054	31.3	<u>1054</u>	<u>31.3</u>	1057	31.2
459.GemsFDTD	4	2763	15.4	2744	15.5	<u>2751</u>	<u>15.4</u>	4	2763	15.4	2744	15.5	<u>2751</u>	<u>15.4</u>
465.tonto	4	<u>1353</u>	<u>29.1</u>	1351	29.1	1358	29.0	4	<u>1235</u>	<u>31.9</u>	1238	31.8	1234	31.9
470.lbm	4	3218	17.1	3216	17.1	<u>3217</u>	<u>17.1</u>	2	1561	17.6	1561	17.6	<u>1561</u>	<u>17.6</u>
481.wrf	4	1550	28.8	1517	29.5	<u>1524</u>	<u>29.3</u>	4	1521	29.4	<u>1515</u>	<u>29.5</u>	1515	29.5
482.sphinx3	4	<u>3421</u>	<u>22.8</u>	3415	22.8	3421	22.8	4	3423	22.8	<u>3419</u>	<u>22.8</u>	3414	22.8

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

Shell Environments:
Default setting.

System Tunables:
(/etc/system parameters)

```
tune_t_fsflushr=10
Controls how many seconds elapse between runs of the
page flush daemon, fsflush.
autoup=600
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.
```

Other System Settings:

The webconsole service was turned off using svcadm disable webconsole.

Platform Notes

Memory is 2-way interleaved by filling all slots with the same capacity DIMMs.

This result is measured on a Fujitsu SPARC Enterprise M3000 Server. Note that the Fujitsu SPARC Enterprise M3000 and Sun SPARC Enterprise M3000 are electrically equivalent.

Base Compiler Invocation

C benchmarks:
cc

C++ benchmarks:
CC

Fortran benchmarks:
f90

Benchmarks using both Fortran and C:
cc f90



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Base Optimization Flags

C benchmarks:

-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=1
-xalias_level=std -xprefetch_auto_type=indirect_array_access

C++ benchmarks:

-library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=1 -xalias_level=compatible

Fortran benchmarks:

-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=1

Benchmarks using both Fortran and C:

-fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=1 -xalias_level=std
-xprefetch_auto_type=indirect_array_access

Base Other Flags

C benchmarks:

-xjobs=4

C++ benchmarks:

-xjobs=4

Fortran benchmarks:

-xjobs=4

Benchmarks using both Fortran and C:

-xjobs=4

Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

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Benchmarks using both Fortran and C:

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Peak Optimization Flags

C benchmarks:

433.milc: -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2
-fsimple=1 -xprefetch_auto_type=indirect_array_access
-W2,-Ainline:rs=400 -xalias_level=std

470.lbm: -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=3
-xvector -xarch=generic

482.sphinx3: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused -xipo=2
-xpagesize=4M -xinline= -xprefetch=no -xalias_level=strong
-lfast -ll2amm

C++ benchmarks:

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

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

450.soplex: basepeak = yes

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

Fortran benchmarks:

410.bwaves: -fast -xipo=2 -xprefetch_level=2
-xprefetch_auto_type=indirect_array_access

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

434.zeusmp: -fast -fma=fused -xipo=2 -xpagesize=4M -lmopt

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -xipo=2 -lfast

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

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

436.cactusADM: -fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=3 -xalias_level=std
-xprefetch_auto_type=indirect_array_access

454.calculix: basepeak = yes

481.wrf: -fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xalias_level=std -xprefetch_level=3
-xprefetch_auto_type=indirect_array_access

Peak Other Flags

C benchmarks:

-xjobs=4

C++ benchmarks:

-xjobs=4

Fortran benchmarks:

-xjobs=4

Benchmarks using both Fortran and C:

-xjobs=4

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.r3.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.r3.xml>

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Tested with SPEC CPU2006 v1.1.

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