



SPEC[®] CFP2006 Result

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Fujitsu SPARC Enterprise M3000

SPECfp[®]_rate2006 = 34.9

SPECfp_rate_base2006 = 33.1

CPU2006 license: 19

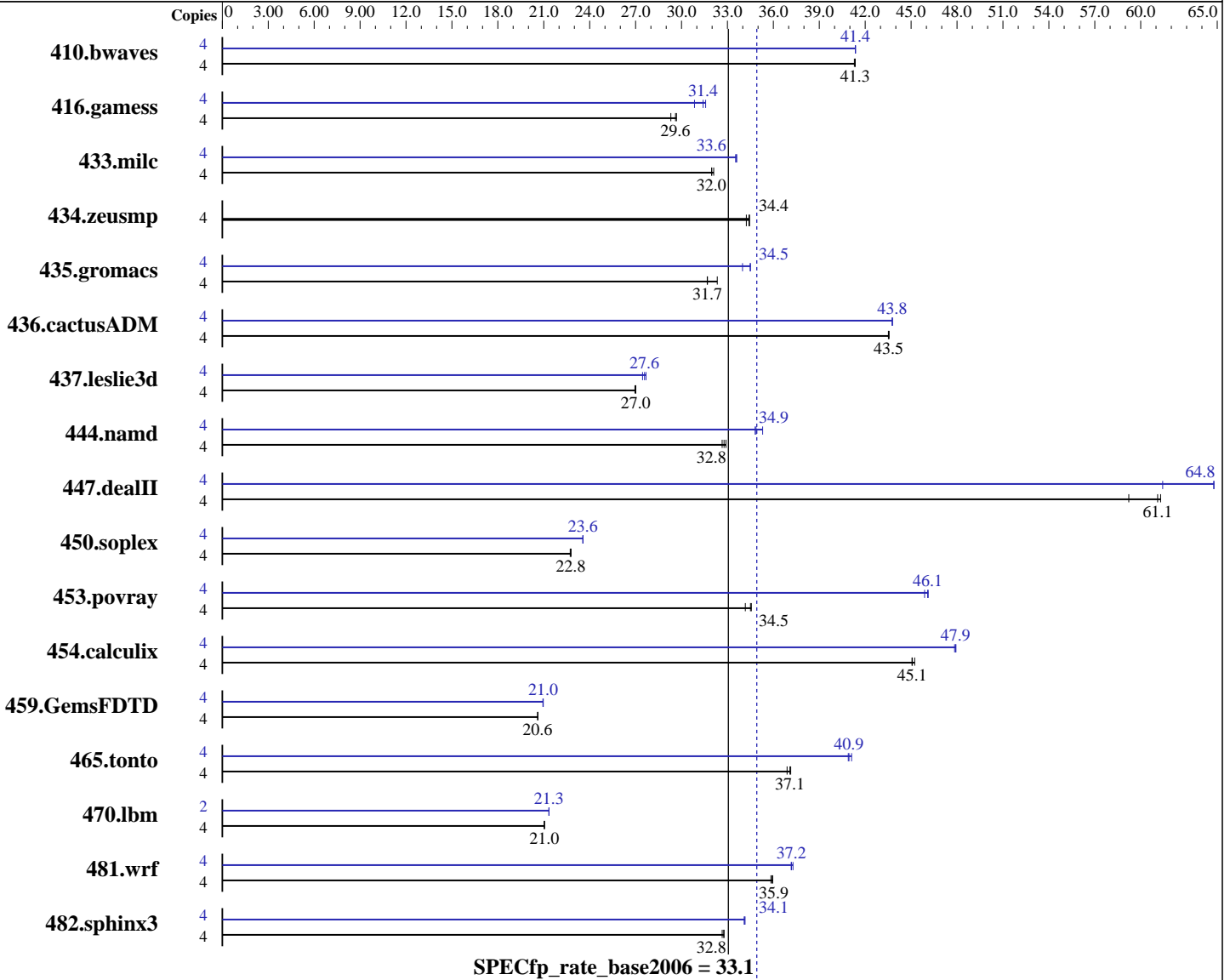
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2011

Hardware Availability: Apr-2011

Software Availability: Sep-2010



Hardware

CPU Name: SPARC64 VII+
 CPU Characteristics:
 CPU MHz: 2860
 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: 5632 KB I+D on chip per chip

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Software

Operating System: Oracle Solaris 10 9/10
 Compiler: Oracle Solaris Studio 12.2
 Auto Parallel: No
 File System: ufs
 System State: Default
 Base Pointers: 32-bit
 Peak Pointers: 32-bit
 Other Software: Apache C++ Standard Library V4.2.1



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L3 Cache: None
Other Cache: None
Memory: 32 GB (8 x 4 GB, 2-way interleaved)
Disk Subsystem: 1 x 300 GB 10,000 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	4	1316	41.3	1315	41.3	<u>1315</u>	<u>41.3</u>	4	1314	41.4	<u>1314</u>	<u>41.4</u>	1314	41.4
416.gamess	4	2640	29.7	<u>2645</u>	<u>29.6</u>	2673	29.3	4	<u>2493</u>	<u>31.4</u>	2480	31.6	2539	30.8
433.milc	4	<u>1148</u>	<u>32.0</u>	1149	32.0	1144	32.1	4	1095	33.5	<u>1093</u>	<u>33.6</u>	1093	33.6
434.zeusmp	4	1063	34.2	<u>1058</u>	<u>34.4</u>	1057	34.4	4	1063	34.2	<u>1058</u>	<u>34.4</u>	1057	34.4
435.gromacs	4	883	32.3	902	31.7	<u>901</u>	<u>31.7</u>	4	828	34.5	840	34.0	<u>828</u>	<u>34.5</u>
436.cactusADM	4	1098	43.5	<u>1098</u>	<u>43.5</u>	1097	43.6	4	1092	43.8	<u>1092</u>	<u>43.8</u>	1092	43.8
437.leslie3d	4	1395	27.0	<u>1392</u>	<u>27.0</u>	1392	27.0	4	<u>1363</u>	<u>27.6</u>	1370	27.5	1358	27.7
444.namd	4	975	32.9	982	32.7	<u>979</u>	<u>32.8</u>	4	922	34.8	909	35.3	<u>920</u>	<u>34.9</u>
447.dealII	4	<u>749</u>	<u>61.1</u>	773	59.2	746	61.3	4	<u>706</u>	<u>64.8</u>	706	64.8	745	61.4
450.soplex	4	<u>1465</u>	<u>22.8</u>	1468	22.7	1464	22.8	4	1415	23.6	1416	23.6	<u>1416</u>	<u>23.6</u>
453.povray	4	616	34.6	<u>617</u>	<u>34.5</u>	623	34.2	4	461	46.1	464	45.9	<u>462</u>	<u>46.1</u>
454.calculix	4	<u>732</u>	<u>45.1</u>	730	45.2	732	45.1	4	689	47.9	690	47.8	<u>689</u>	<u>47.9</u>
459.GemsFDTD	4	2058	20.6	2060	20.6	<u>2060</u>	<u>20.6</u>	4	<u>2025</u>	<u>21.0</u>	2026	20.9	2024	21.0
465.tonto	4	<u>1061</u>	<u>37.1</u>	1060	37.1	1067	36.9	4	957	41.1	<u>961</u>	<u>40.9</u>	962	40.9
470.lbm	4	2613	21.0	2612	21.0	<u>2612</u>	<u>21.0</u>	2	1288	21.3	1287	21.3	<u>1288</u>	<u>21.3</u>
481.wrf	4	1243	36.0	<u>1244</u>	<u>35.9</u>	1247	35.8	4	1198	37.3	<u>1202</u>	<u>37.2</u>	1202	37.2
482.sphinx3	4	2387	32.7	<u>2380</u>	<u>32.8</u>	2378	32.8	4	2283	34.2	2286	34.1	<u>2285</u>	<u>34.1</u>

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

Compiler Invocation Notes

Oracle Solaris Studio 12.2 is distributed with mandatory OS patches
118683-05 119963-20 120753-08
Oracle Solaris Studio 12.2 and patches are available at
<http://oracle.com/goto/solarisstudio>

The Apache C++ Standard Library V4.2.1 was installed from
<http://stdcxx.apache.org/download.html> using:
alias gmake=specmake
gmake BUILDTYPE=8d CONFIG=sunpro.config



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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.)

Operating System Notes

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

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 SPARC Enterprise M3000 server from Fujitsu. The SPARC Enterprise M3000 server from Oracle and from Fujitsu are electrically equivalent.

General Notes

447.dealIII (peak): "apache_stdctx_4_2_1" src.alt was used.

447.dealIII (base): "apache_stdctx_4_2_1" src.alt was used.



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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 -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -xunroll=8 -l12amm

C++ benchmarks:
-xdepend -fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xO4 -xalias_level=compatible -xprefetch=latx:0.5 -library=no%Cstd
-I/mnt/spec//stdcxx-4.2.1/include
-I/mnt/spec//stdcxx-4.2.1/build/include
-L/mnt/spec//stdcxx-4.2.1/build/lib -R/mnt/spec//stdcxx-4.2.1/build/lib
-lstd8d

Fortran benchmarks:
-fast -fma=fused -xipo=2 -xpagesize=4M -xlinkopt -xvector
-xprefetch_level=2 -l12amm

Benchmarks using both Fortran and C:
-fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M -xlinkopt
-xvector -xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -xunroll=8 -xprefetch_level=2 -l12amm

Base Other Flags

C benchmarks:
-xjobs=4 -V -#

C++ benchmarks:
-xjobs=4 -verbose=diags,version

Fortran benchmarks:
-xjobs=4 -V -v

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Base Other Flags (Continued)

Benchmarks using both Fortran and C:
-xjobs=4 -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: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xarch=generic -xcache=generic
-xlinkopt -fsimple=1 -W2,-Ainline:rs=400 -xalias_level=std
-xprefetch_auto_type=indirect_array_access -xprefetch_level=3
-xunroll=2

470.lbm: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xO4 -xprefetch_level=2

482.sphinx3: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=1 -xalias_level=strong
-xprefetch=latx:1.5 -xunroll=4 -lbsdmalloc

C++ benchmarks:

444.namd: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=compatible -library=stlport4
-xipo=1 -xO3 -xchip=generic -xinline= -xlinkopt
-xprefetch_level=2 -xprefetch=latx:2.5 -l12amm -lfast

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Peak Optimization Flags (Continued)

447.dealIII: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=compatible -library=no%Cstd
-I/mnt/spec//stdcxx-4.2.1/include
-I/mnt/spec//stdcxx-4.2.1/build/include -xipo=2
-xchip=generic -xprefetch_auto_type=indirect_array_access
-xrestrict -xprefetch_level=2
-L/mnt/spec//stdcxx-4.2.1/build/lib
-R/mnt/spec//stdcxx-4.2.1/build/lib -lstd8d

450.soplex: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=compatible -library=stlport4
-xarch=generic -xprefetch=no%auto

453.povray: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=compatible -library=stlport4
-M /usr/lib/ld/map.bssalign -xipo=2 -xO4 -xprefetch=no%auto
-xunroll=4 -lfast -ll2amm -lbsdmalloc

Fortran benchmarks:

410.bwaves: -fast -fma=fused -xpagesize=4M -xipo=2 -xlinkopt
-xprefetch_level=2 -xprefetch=latx:2

416.gamess: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=1 -xO3
-xinline= -xprefetch=no%auto -xunroll=3 -lfast -ll2amm
-lbsdmalloc

434.zeusmp: basepeak = yes

437.leslie3d: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=1 -xO3
-xcache=generic -xprefetch=latx:2 -xunroll=10 -ll2amm

459.GemsFDTD: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=1 -xarch=sparcvis2
-xprefetch_auto_type=indirect_array_access -xprefetch_level=2
-xprefetch=latx:0.1 -xunroll=7

465.tonto: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xprefetch=no%auto -xunroll=4
-lbsdmalloc

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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)
-fma=fused -xpagesize=4M -xO4 -xchip=generic
-xcache=generic -fsimple=0 -xprefetch=no%auto -xunroll=3

436.cactusADM: -fast(cc) -fast(f90) -fma=fused -xpagesize=4M
-xalias_level=std -xunroll=12 -lfast

454.calculix: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-fma=fused -xpagesize=4M -xipo=2 -xcache=generic
-xprefetch=latx:3 -xunroll=8 -xalias_level=std -lmopt

481.wrf: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-fma=fused -xpagesize=4M -xalias_level=std -xipo=2 -xO4
-xcache=generic -xprefetch_auto_type=indirect_array_access
-xprefetch=latx:1

Peak Other Flags

C benchmarks:
-xjobs=4 -V -#

C++ benchmarks:
-xjobs=4 -verbose=diags,version

Fortran benchmarks:
-xjobs=4 -V -v

Benchmarks using both Fortran and C:
-xjobs=4 -V -# -v

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110413.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Oracle-Solaris-Studio12.2-SPARC.20110413.xml>



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