



SPEC® CFP2006 Result

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Fujitsu SPARC Enterprise M3000

SPECfp®_rate2006 = 48.4

SPECfp_rate_base2006 = 45.6

CPU2006 license: 19

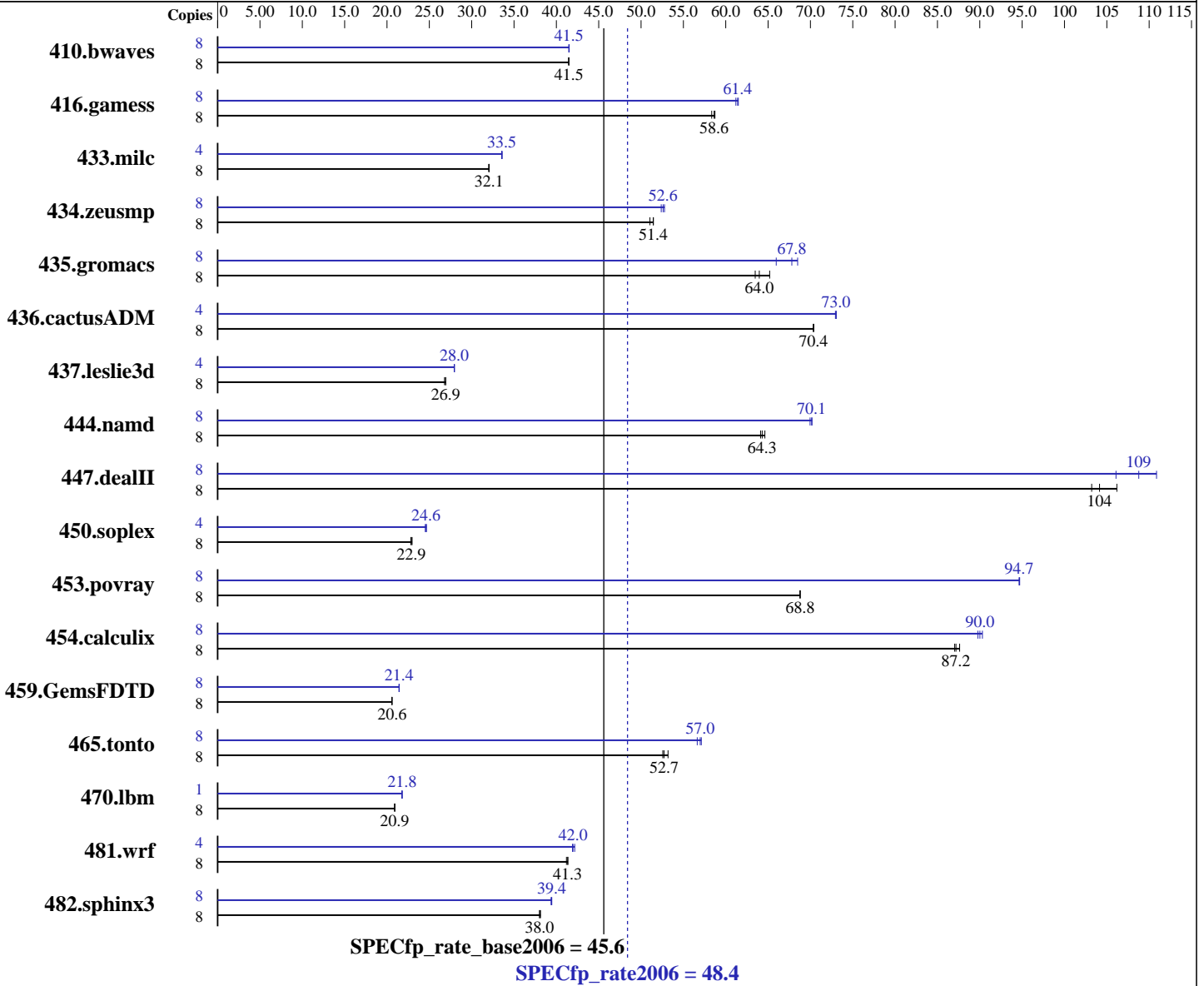
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Mar-2011

Hardware Availability: Apr-2011

Software Availability: Sep-2010



Hardware

CPU Name: SPARC64 VII+
 CPU Characteristics:
 CPU MHz: 2860
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 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	8	2623	41.4	<u>2622</u>	<u>41.5</u>	2620	41.5	8	2622	41.5	<u>2619</u>	<u>41.5</u>	2619	41.5
416.gamess	8	2685	58.3	<u>2672</u>	<u>58.6</u>	2667	58.7	8	<u>2551</u>	<u>61.4</u>	2560	61.2	2547	61.5
433.milc	8	2295	32.0	<u>2291</u>	<u>32.1</u>	2290	32.1	4	1095	33.5	<u>1095</u>	<u>33.5</u>	1093	33.6
434.zeusmp	8	<u>1415</u>	<u>51.4</u>	1426	51.0	1415	51.5	8	<u>1384</u>	<u>52.6</u>	1380	52.8	1390	52.4
435.gromacs	8	900	63.5	876	65.2	<u>893</u>	<u>64.0</u>	8	<u>842</u>	<u>67.8</u>	834	68.5	866	66.0
436.cactusADM	8	<u>1359</u>	<u>70.4</u>	1358	70.4	1359	70.3	4	655	73.0	654	73.0	<u>655</u>	<u>73.0</u>
437.leslie3d	8	2807	26.8	2793	26.9	<u>2793</u>	<u>26.9</u>	4	<u>1345</u>	<u>28.0</u>	1346	27.9	1345	28.0
444.namd	8	1001	64.1	993	64.6	<u>998</u>	<u>64.3</u>	8	917	70.0	<u>915</u>	<u>70.1</u>	914	70.2
447.dealII	8	862	106	<u>879</u>	<u>104</u>	887	103	8	<u>841</u>	<u>109</u>	863	106	825	111
450.soplex	8	2925	22.8	<u>2916</u>	<u>22.9</u>	2905	23.0	4	1361	24.5	<u>1355</u>	<u>24.6</u>	1353	24.7
453.povray	8	619	68.8	619	68.8	<u>619</u>	<u>68.8</u>	8	450	94.7	449	94.7	<u>450</u>	<u>94.7</u>
454.calculix	8	758	87.0	753	87.6	<u>757</u>	<u>87.2</u>	8	735	89.8	<u>733</u>	<u>90.0</u>	731	90.3
459.GemsFDTD	8	4120	20.6	4127	20.6	<u>4121</u>	<u>20.6</u>	8	3959	21.4	3961	21.4	<u>3961</u>	<u>21.4</u>
465.tonto	8	1498	52.6	<u>1493</u>	<u>52.7</u>	1480	53.2	8	<u>1381</u>	<u>57.0</u>	1378	57.1	1390	56.6
470.lbm	8	5256	20.9	<u>5256</u>	<u>20.9</u>	5258	20.9	1	632	21.7	630	21.8	<u>631</u>	<u>21.8</u>
481.wrf	8	2161	41.4	2170	41.2	<u>2162</u>	<u>41.3</u>	4	<u>1065</u>	<u>42.0</u>	1060	42.2	1066	41.9
482.sphinx3	8	4089	38.1	<u>4100</u>	<u>38.0</u>	4102	38.0	8	3951	39.5	3960	39.4	<u>3953</u>	<u>39.4</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_stdccxx_4_2_1" src.alt was used.

447.dealIII (base): "apache_stdccxx_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
-x04 -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 -lmopt

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 -lmopt

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 -M /usr/lib/ld/map.bssalign -xipo=2
-xchip=generic -lfast

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 -ll2amm -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
-xprefetch_auto_type=indirect_array_access -xrestrict
-xchip=generic -xunroll=4
-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 -lfast -xO4 -xipo=2
-xunroll=4 -xprefetch=no%auto

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 -xipo=2 -xprefetch=no%auto -xO3 -lfast

434.zeusmp: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xipo=2 -xO4 -xprefetch=latx:1 -xunroll=8 -lfast
-lbsdmalloc

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 -xipo=2 -xvector -xinline=
-xchip=generic -fsimple=0 -xunroll=7 -xprefetch=no%auto

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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