



SPEC® CFP2006 Result

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Fujitsu SPARC Enterprise M3000

SPECfp®2006 = 18.9

SPECfp_base2006 = 17.9

CPU2006 license: 19

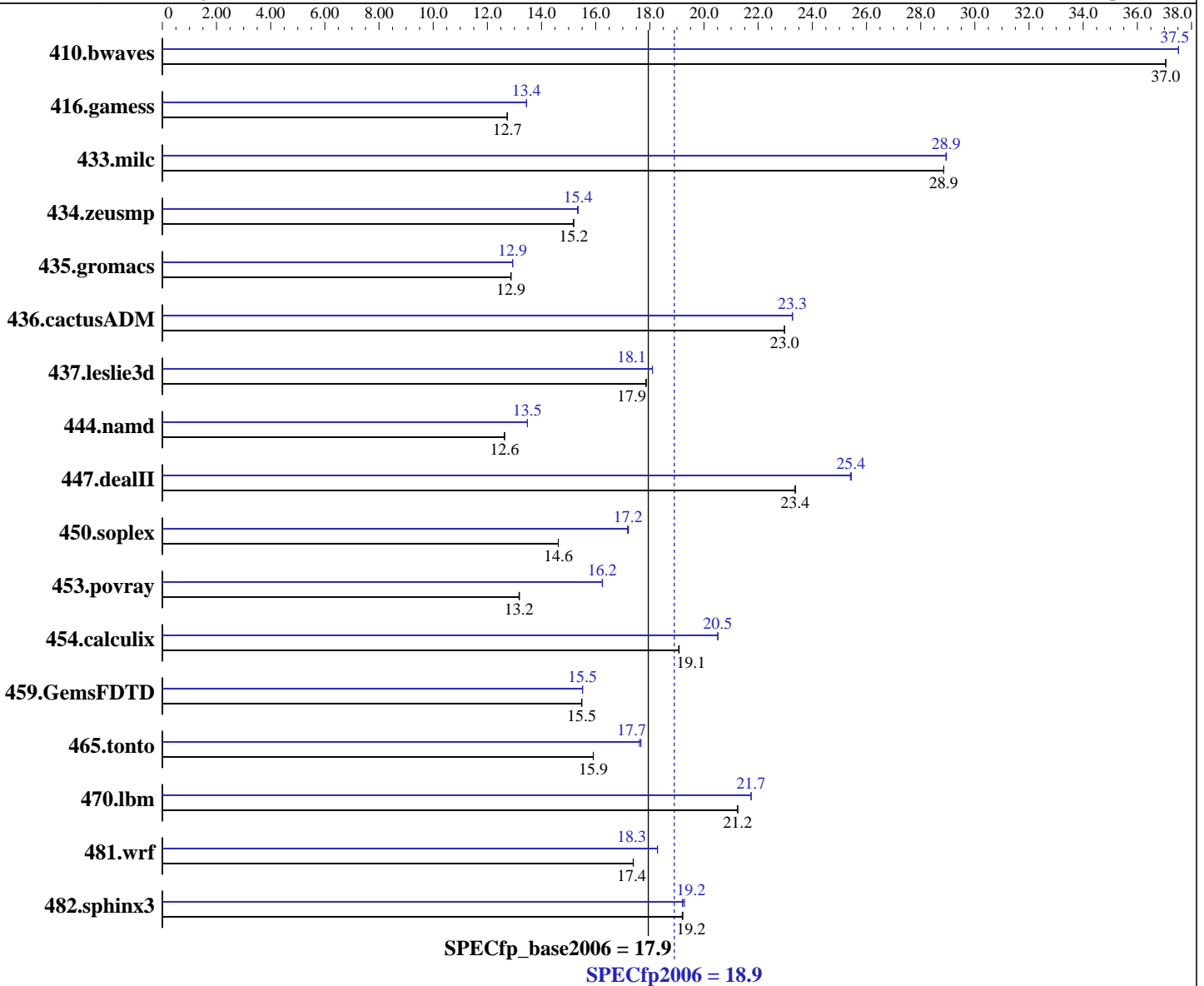
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Feb-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

Continued on next page

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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	367	37.0	<u>367</u>	<u>37.0</u>	367	37.1	<u>362</u>	<u>37.5</u>	362	37.5	362	37.5
416.gamess	1538	12.7	1537	12.7	<u>1537</u>	<u>12.7</u>	1456	13.5	<u>1456</u>	<u>13.4</u>	1457	13.4
433.milc	318	28.9	<u>318</u>	<u>28.9</u>	318	28.9	<u>317</u>	<u>28.9</u>	317	29.0	317	28.9
434.zeusmp	599	15.2	599	15.2	<u>599</u>	<u>15.2</u>	<u>593</u>	<u>15.4</u>	593	15.4	594	15.3
435.gromacs	555	12.9	<u>555</u>	<u>12.9</u>	555	12.9	<u>552</u>	<u>12.9</u>	552	12.9	552	12.9
436.cactusADM	520	23.0	<u>520</u>	<u>23.0</u>	520	23.0	514	23.3	514	23.3	<u>514</u>	<u>23.3</u>
437.leslie3d	526	17.9	<u>526</u>	<u>17.9</u>	526	17.9	519	18.1	<u>519</u>	<u>18.1</u>	520	18.1
444.namd	<u>635</u>	<u>12.6</u>	635	12.6	635	12.6	595	13.5	<u>595</u>	<u>13.5</u>	595	13.5
447.dealII	<u>490</u>	<u>23.4</u>	490	23.4	489	23.4	450	25.4	<u>450</u>	<u>25.4</u>	450	25.4
450.soplex	<u>570</u>	<u>14.6</u>	570	14.6	570	14.6	<u>485</u>	<u>17.2</u>	485	17.2	486	17.2
453.povray	<u>404</u>	<u>13.2</u>	403	13.2	404	13.2	328	16.2	327	16.3	<u>328</u>	<u>16.2</u>
454.calculix	<u>433</u>	<u>19.1</u>	432	19.1	433	19.1	402	20.5	402	20.5	<u>402</u>	<u>20.5</u>
459.GemsFDTD	685	15.5	<u>685</u>	<u>15.5</u>	685	15.5	684	15.5	<u>684</u>	<u>15.5</u>	684	15.5
465.tonto	618	15.9	619	15.9	<u>618</u>	<u>15.9</u>	557	17.7	<u>557</u>	<u>17.7</u>	559	17.6
470.lbm	647	21.2	<u>647</u>	<u>21.2</u>	647	21.2	<u>632</u>	<u>21.7</u>	632	21.7	632	21.7
481.wrf	643	17.4	<u>642</u>	<u>17.4</u>	642	17.4	611	18.3	<u>611</u>	<u>18.3</u>	611	18.3
482.sphinx3	1014	19.2	<u>1014</u>	<u>19.2</u>	1015	19.2	1015	19.2	<u>1013</u>	<u>19.2</u>	1011	19.3

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
-xcache=generic -xalias_level=std -xprefetch=latx:1.2
-xprefetch_level=3 -xunroll=4 -l12amm -lbsdmalloc

C++ benchmarks:
-xdepend -M /usr/lib/ld/map.bssalign -fast -fma=fused -xipo=2
-xpagesize=4M -xlinkopt -xvector -xcache=generic
-xalias_level=compatible -xprefetch_level=2 -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:
-M /usr/lib/ld/map.bssalign -fast -fma=fused -xipo=2 -xpagesize=4M
-xlinkopt -xvector -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -xprefetch=latx:2

Benchmarks using both Fortran and C:
-M /usr/lib/ld/map.bssalign -fast(cc) -fast(f90) -fma=fused -xipo=2
-xpagesize=4M -xlinkopt -xvector -xcache=generic -xalias_level=std
-xprefetch=latx:1.2 -xprefetch_level=3 -xunroll=4
-xprefetch_auto_type=indirect_array_access -xprefetch=latx:2

Base Other Flags

C benchmarks:
-xjobs=2 -V -#

C++ benchmarks:
-xjobs=2 -verbose=diags,version

Continued on next page



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Base Other Flags (Continued)

Fortran benchmarks:
-xjobs=2 -V -v

Benchmarks using both Fortran and C:
-xjobs=2 -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: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xipo=2 -xO4 -xlinkopt -xvector -xunroll=4 -fsimple=1
-W2,-Ainline:rs=400 -xalias_level=std
-xprefetch_auto_type=indirect_array_access -xprefetch_level=3

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: -fast -fma=fused -xpagesize=4M -xalias_level=std -xipo=2
-xunroll=4 -xprefetch_level=3 -xprefetch=latx:1.2 -ll2amm
-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=2 -xchip=generic -xalias_level=any -xprefetch=no%auto
-xunroll=2

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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 -xO4
-xchip=generic -xrestrict -xunroll=4
-xprefetch_auto_type=indirect_array_access
-xprefetch=latx:0.5 -L/mnt/spec//stdcxx-4.2.1/build/lib
-R/mnt/spec//stdcxx-4.2.1/build/lib -lstd8d -ll2amm

450.soplex: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -Qoption cg -Qlp-ol=1 -Qoption cg -Qlp-it=3
-Qoption cg -Qlp-imb=1 -Qoption iropt -Apf:pdl=3
-xalias_level=simple -xrestrict -library=stlport4 -xipo=2
-xO4 -xunroll=10 -xprefetch_auto_type=indirect_array_access
-xprefetch_level=3 -ll2amm

453.povray: -xdepend -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xalias_level=compatible -library=stlport4
-xipo=2 -xcache=generic -xunroll=3 -xprefetch=no%auto
-lfast -lbsdmalloc

Fortran benchmarks:

410.bwaves: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xipo=2 -xlinkopt -xunroll=4 -xprefetch=latx:3

416.gamess: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xO3 -xlinkopt -xprefetch_level=1
-xunroll=6 -lfast -lbsdmalloc

434.zeusmp: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2 -xO4
-xprefetch=latx:3 -lfast

437.leslie3d: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -M /usr/lib/ld/map.bssalign -xipo=2
-xunroll=7 -xprefetch_level=1 -xprefetch=latx:1.2

459.GemsFDTD: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xipo=2 -xunroll=9 -xprefetch_level=3 -xprefetch=latx:2

465.tonto: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xO4 -xunroll=3 -ll2amm -lbsdmalloc

Continued on next page



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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 -xchip=generic -fsimple=0
-xprefetch_auto_type=indirect_array_access -xunroll=4

436.cactusADM: -fast(cc) -fast(f90) -fma=fused -xpagesize=4M
-xalias_level=std -M /usr/lib/ld/map.bssalign -xipo=2
-xprefetch_auto_type=indirect_array_access -xprefetch_level=2
-xprefetch=latx:1.2 -lfast

454.calculix: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast(cc) -fast(f90)
-fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xipo=2 -xprefetch_level=3 -xprefetch=latx:3
-xalias_level=std

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
-xcache=generic -xunroll=5
-xprefetch_auto_type=indirect_array_access -xprefetch=latx:2

Peak Other Flags

C benchmarks:
-xjobs=2 -V -#

C++ benchmarks:
-xjobs=2 -verbose=diags,version

Fortran benchmarks:
-xjobs=2 -V -v

Benchmarks using both Fortran and C:
-xjobs=2 -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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