SPEC® CFP2006 Result

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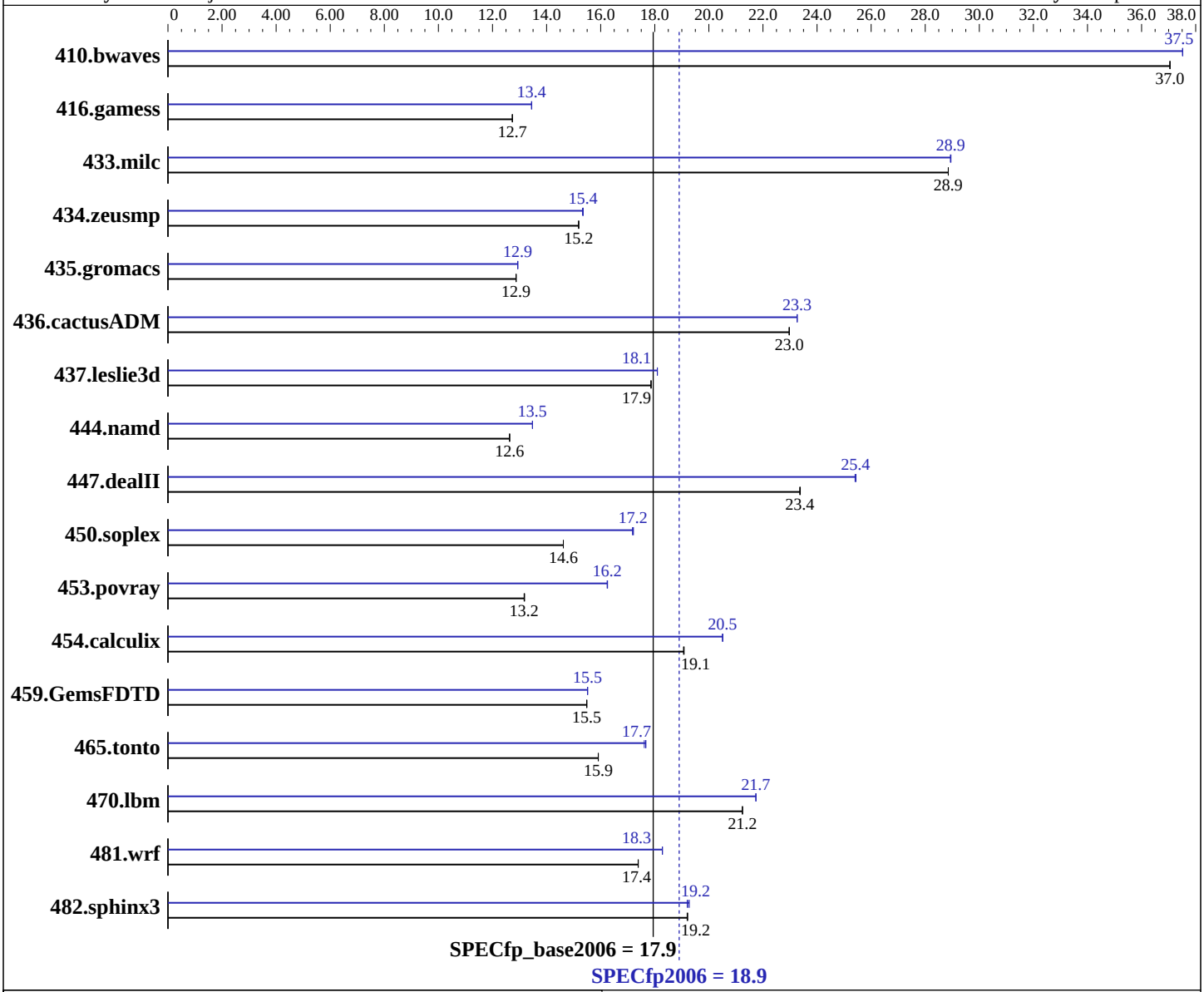
Fujitsu
SPARC Enterprise M3000

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

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

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.dealII (peak): "apache_stdcxx_4_2_1" src.alt was used.

447.dealII (base): "apache_stdcxx_4_2_1" src.alt was used.
```

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 -ll2amm -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

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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.dealII: -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

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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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