SPEC® CFP2006 Result

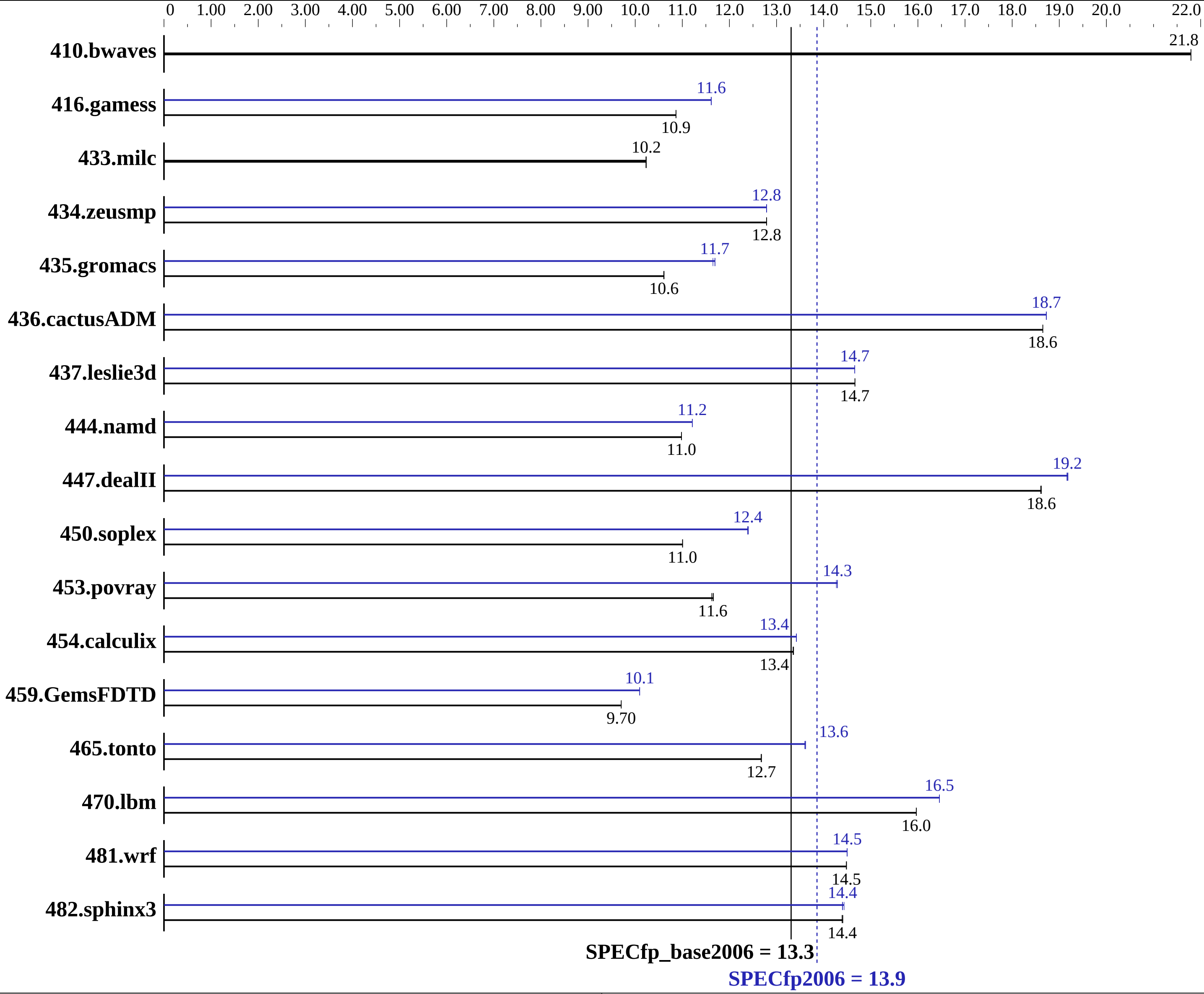
Fujitsu

Fujitsu SPARC Enterprise M4000

SPECfp®2006 = 13.9

SPECfp_base2006 = 13.3

CPU2006 license:	19	**Test date:**	Oct-2009
Test sponsor:	Fujitsu	**Hardware Availability:**	Nov-2009
Tested by:	Fujitsu	**Software Availability:**	Jul-2009



Hardware

CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2530
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 2 CPUMs; each CPUM contains 2 CPU chips
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:	Solaris 10 5/09 with patches 119963-16, 120753-07, 118683-03
Compiler:	Sun Studio 12 Update 1
Auto Parallel:	No
File System:	ufs
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit

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L3 Cache: None
Other Cache: None
Memory: 64 GB (32 x 2 GB), 8-way interleaved
Disk Subsystem: 1 x Seagate Savvio 10K.2 (146 GB 10,000 RPM SAS)
Other Hardware: None

Other Software: Apache C++ Standard Library V4.2.1

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	624	21.8	**624**	**21.8**	624	21.8	624	21.8	**624**	**21.8**	624	21.8
416.gamess	1802	10.9	1802	10.9	**1802**	**10.9**	**1686**	**11.6**	1686	11.6	1686	11.6
433.milc	897	10.2	898	10.2	**897**	**10.2**	897	10.2	898	10.2	**897**	**10.2**
434.zeusmp	712	12.8	**712**	**12.8**	712	12.8	712	12.8	**712**	**12.8**	712	12.8
435.gromacs	673	10.6	**673**	**10.6**	673	10.6	613	11.7	**611**	**11.7**	611	11.7
436.cactusADM	641	18.7	641	18.6	**641**	**18.6**	638	18.7	**638**	**18.7**	638	18.7
437.leslie3d	641	14.7	**641**	**14.7**	641	14.7	641	14.7	641	14.7	**641**	**14.7**
444.namd	730	11.0	**730**	**11.0**	730	11.0	**715**	**11.2**	715	11.2	715	11.2
447.dealII	614	18.6	**614**	**18.6**	615	18.6	**597**	**19.2**	597	19.2	596	19.2
450.soplex	758	11.0	758	11.0	**758**	**11.0**	672	12.4	673	12.4	**673**	**12.4**
453.povray	458	11.6	456	11.7	**457**	**11.6**	372	14.3	373	14.3	**372**	**14.3**
454.calculix	617	13.4	618	13.3	**618**	**13.4**	615	13.4	615	13.4	**615**	**13.4**
459.GemsFDTD	1093	9.71	1093	9.70	**1093**	**9.70**	**1051**	**10.1**	1051	10.1	1051	10.1
465.tonto	777	12.7	776	12.7	**776**	**12.7**	723	13.6	**723**	**13.6**	724	13.6
470.lbm	**861**	**16.0**	861	16.0	861	16.0	**835**	**16.5**	835	16.5	835	16.5
481.wrf	771	14.5	771	14.5	**771**	**14.5**	770	14.5	**770**	**14.5**	770	14.5
482.sphinx3	1353	14.4	**1354**	**14.4**	1354	14.4	1350	14.4	**1353**	**14.4**	1354	14.4

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/ss12u1_patches.jsp

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

```
The config file option 'submit' was used.  Processes were assigned to
specific processors using 'pbind' commands.  The list of processors to use
was provided in the 'BIND' variable, to generate the pbind commands.
(For details, please see the config file.)
```

Operating System Notes

```
Shell Environments:

    ulimit -s 131072 was used to limit the space consumed
    by the stack.(making more space available for 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 8-way interleaved by filling all slots with the same
capacity DIMMs.

This result is measured on a Fujitsu SPARC Enterprise M4000 Server.
Note that the Fujitsu SPARC Enterprise M4000 and Sun SPARC Enterprise
M4000 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

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Base Compiler Invocation (Continued)

Fortran benchmarks:
`f90`

Benchmarks using both Fortran and C:
`cc f90`

Base Optimization Flags

C benchmarks:
```
-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2
-xalias_level=std -xprefetch_auto_type=indirect_array_access
-xprefetch=latx:2 -M /usr/lib/ld/map.bssalign -ll2amm
```

C++ benchmarks:
```
-xdepend -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2
-xalias_level=compatible -xprefetch_level=3 -library=no%Cstd
-I/export/cpu2006/stdcxx-4.2.1/include
-I/export/cpu2006/stdcxx-4.2.1/build/include -M /usr/lib/ld/map.bssalign
-L/export/cpu2006/stdcxx-4.2.1/build/lib
-R/export/cpu2006/stdcxx-4.2.1/build/lib -lstd8d
```

Fortran benchmarks:
```
-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2
-xprefetch=latx:2 -M /usr/lib/ld/map.bssalign -ll2amm
```

Benchmarks using both Fortran and C:
```
-fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xalias_level=std
-xprefetch_auto_type=indirect_array_access -xprefetch=latx:2
-M /usr/lib/ld/map.bssalign -ll2amm
```

Base Other Flags

C benchmarks:
`-xjobs=8 -V -#`

C++ benchmarks:
`-xjobs=8 -verbose=diags,version`

Fortran benchmarks:
`-xjobs=8 -V -v`

Benchmarks using both Fortran and C:
`-xjobs=8 -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: basepeak = yes

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

482.sphinx3: -fast -fma=fused -xpagesize=4M -xipo=2 -xprefetch_level=2 -xprefetch=latx:2 -xalias_level=std -xprefetch_auto_type=indirect_array_access -ll2amm

C++ benchmarks:

444.namd: -xdepend -fast -fma=fused -xpagesize=4M -xalias_level=compatible -library=stlport4 -xipo=2 -xprefetch=no%auto

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/export/cpu2006/stdcxx-4.2.1/include -I/export/cpu2006/stdcxx-4.2.1/build/include -xipo=2 -xprefetch_level=2 -L/export/cpu2006/stdcxx-4.2.1/build/lib -R/export/cpu2006/stdcxx-4.2.1/build/lib -lstd8d

450.soplex: -xdepend -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -xprefetch_level=2 -xprefetch_auto_type=indirect_array_access -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

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

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Fujitsu
Fujitsu SPARC Enterprise M4000

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CPU2006 license:	19	**Test date:**	Oct-2009
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Tested by:	Fujitsu	**Software Availability:**	Jul-2009

Peak Optimization Flags (Continued)

453.povray (continued):
-xipo=2 -xlinkopt=2

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xprefetch_level=3

434.zeusmp: -fast -fma=fused -xpagesize=4M -M /usr/lib/ld/map.bssalign
-xipo=2 -xprefetch=latx:2 -ll2amm

437.leslie3d: Same as 434.zeusmp

459.GemsFDTD: -xprofile=collect:./feedback(pass 1)
-xprofile=use:./feedback(pass 2) -fast -fma=fused
-xpagesize=4M -xipo=2 -xprefetch=latx:2

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

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 -xinline= -xchip=generic
-fsimple=0

436.cactusADM: -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

454.calculix: -fast(cc) -fast(f90) -fma=fused -xipo=2 -xpagesize=4M
-xprefetch_level=2 -xprefetch=latx:0.5 -xalias_level=std
-xprefetch_auto_type=indirect_array_access -ll2amm

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

Peak Other Flags

C benchmarks:
-xjobs=8 -V -#

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Peak Other Flags (Continued)

C++ benchmarks:
`-xjobs=8 -verbose=diags,version`

Fortran benchmarks:
`-xjobs=8 -V -v`

Benchmarks using both Fortran and C:
`-xjobs=8 -V -# -v`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r4.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-12u1-and-gccfss4.2.r4.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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