SPEC® CFP2006 Result

Fujitsu Limited

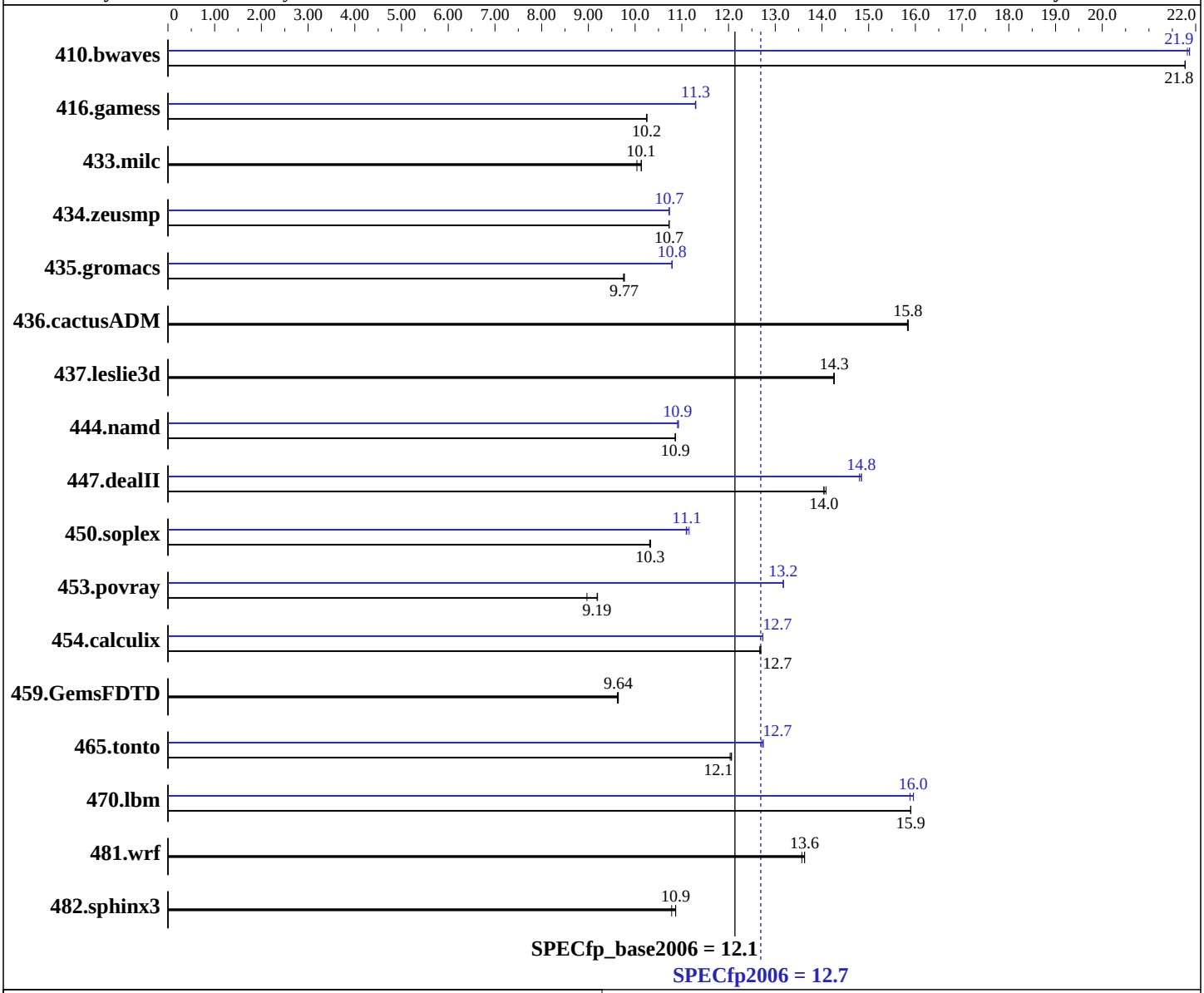
Fujitsu SPARC Enterprise M4000

SPECfp®2006 = 12.7

SPECfp_base2006 = 12.1

CPU2006 license: 19
Test sponsor: Fujitsu Limited
Tested by: Sun Microsystems

Test date: Jul-2008
Hardware Availability: Jul-2008
Software Availability: Jul-2008



Hardware

CPU Name:	SPARC64 VII
CPU Characteristics:	
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 to 2 CPUM; each CPUM contains 2 CPU chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	5 MB I+D on chip per chip

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Software

Operating System:	Solaris 10 5/08 with patch 137111-03
Compiler:	Sun Studio 12 with patches 124867-06, 124861-07, 124863-05, 127000-05 (see patch information below)
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)
Disk Subsystem: Seagate 73GB 10000 RPM SAS
Other Hardware: None

Other Software: None

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**	623	21.8	621	21.9	**622**	**21.9**
416.gamess	1911	10.2	1910	10.3	**1910**	**10.2**	1733	11.3	**1733**	**11.3**	1734	11.3
433.milc	914	10.0	906	10.1	**906**	**10.1**	914	10.0	906	10.1	**906**	**10.1**
434.zeusmp	848	10.7	**848**	**10.7**	848	10.7	**848**	**10.7**	848	10.7	848	10.7
435.gromacs	**731**	**9.77**	731	9.77	732	9.75	662	10.8	**662**	**10.8**	661	10.8
436.cactusADM	754	15.8	755	15.8	**754**	**15.8**	754	15.8	755	15.8	**754**	**15.8**
437.leslie3d	659	14.3	660	14.3	**659**	**14.3**	659	14.3	660	14.3	**659**	**14.3**
444.namd	**738**	**10.9**	738	10.9	738	10.9	734	10.9	735	10.9	**735**	**10.9**
447.dealII	815	14.0	812	14.1	**815**	**14.0**	**771**	**14.8**	771	14.8	773	14.8
450.soplex	807	10.3	809	10.3	**808**	**10.3**	748	11.2	**751**	**11.1**	752	11.1
453.povray	593	8.97	578	9.20	**579**	**9.19**	**404**	**13.2**	404	13.2	404	13.2
454.calculix	650	12.7	**650**	**12.7**	651	12.7	648	12.7	**648**	**12.7**	648	12.7
459.GemsFDTD	1101	9.64	1103	9.62	**1101**	**9.64**	1101	9.64	1103	9.62	**1101**	**9.64**
465.tonto	818	12.0	**816**	**12.1**	816	12.1	774	12.7	772	12.7	**772**	**12.7**
470.lbm	864	15.9	**864**	**15.9**	864	15.9	865	15.9	**861**	**16.0**	861	16.0
481.wrf	823	13.6	820	13.6	**820**	**13.6**	823	13.6	820	13.6	**820**	**13.6**
482.sphinx3	1793	10.9	**1793**	**10.9**	1807	10.8	1793	10.9	**1793**	**10.9**	1807	10.8

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/ss12_patches.jsp
```

Operating System Notes

```
Environment Variable Settings:

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
```

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Operating System Notes (Continued)

```
    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 Sun SPARC Enterprise M4000 Server.
Note that the Sun SPARC Enterprise M4000 and Fujitsu SPARC Enterprise
M4000 are electrically equivalent.
```

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 -xprefetch_level=2
-xalias_level=std -xprefetch_level=3
-xprefetch_auto_type=indirect_array_access
```

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Base Optimization Flags (Continued)

C++ benchmarks:
`-xdepend -library=stlport4 -fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2 -xalias_level=compatible`

Fortran benchmarks:
`-fast -fma=fused -xipo=2 -xpagesize=4M -xprefetch_level=2`

Benchmarks using both Fortran and C:
`-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`

Base Other Flags

C benchmarks:
`-xjobs=16 -V -#`

C++ benchmarks:
`-xjobs=16 -verbose=diags,version`

Fortran benchmarks:
`-xjobs=16 -V -v`

Benchmarks using both Fortran and C:
`-xjobs=16 -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:

Continued on next page

Peak Optimization Flags (Continued)

433.milc: basepeak = yes

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

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -xdepend -library=stlport4 -fast -xipo=2 -fma=fused -xpagesize=4M -xalias_level=compatible -xprefetch_level=1

447.dealII: -xdepend -library=stlport4 -xprofile=collect:./feedback(pass 1) -xprofile=use:./feedback(pass 2) -fast -xipo=2 -fma=fused -xpagesize=4M -xalias_level=compatible -xrestrict -xprefetch_auto_type=indirect_array_access -xprefetch_level=2

450.soplex: -xdepend -library=stlport4 -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

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

Fortran benchmarks:

410.bwaves: -fast -xipo=2 -xprefetch_level=2 -xprefetch_auto_type=indirect_array_access

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

434.zeusmp: -fast -xipo=2 -fma=fused -xpagesize=4M -lmopt

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

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

Benchmarks using both Fortran and C:

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Peak Optimization Flags (Continued)

435.gromacs: `-xprofile=collect:./feedback`(pass 1) `-xprofile=use:./feedback`(pass 2) `-fast`(cc) `-fast`(f90) `-xipo=2 -fma=fused -xpagesize=4M -xinline= -xchip=generic -fsimple=0`

436.cactusADM: `basepeak = yes`

454.calculix: `-fast`(cc) `-fast`(f90) `-xipo=2 -fma=fused -xpagesize=4M`

481.wrf: `basepeak = yes`

Peak Other Flags

C benchmarks:
`-xjobs=16 -V -#`

C++ benchmarks:
`-xjobs=16 -verbose=diags,version`

Fortran benchmarks:
`-xjobs=16 -V -v`

Benchmarks using both Fortran and C:
`-xjobs=16 -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-and-gccfss4.2.20090713.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Sun-Solaris-Studio12-and-gccfss4.2.20090713.xml`

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

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 18:49:16 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 5 August 2008.