



SPEC® CPU2017 Floating Point Rate Result

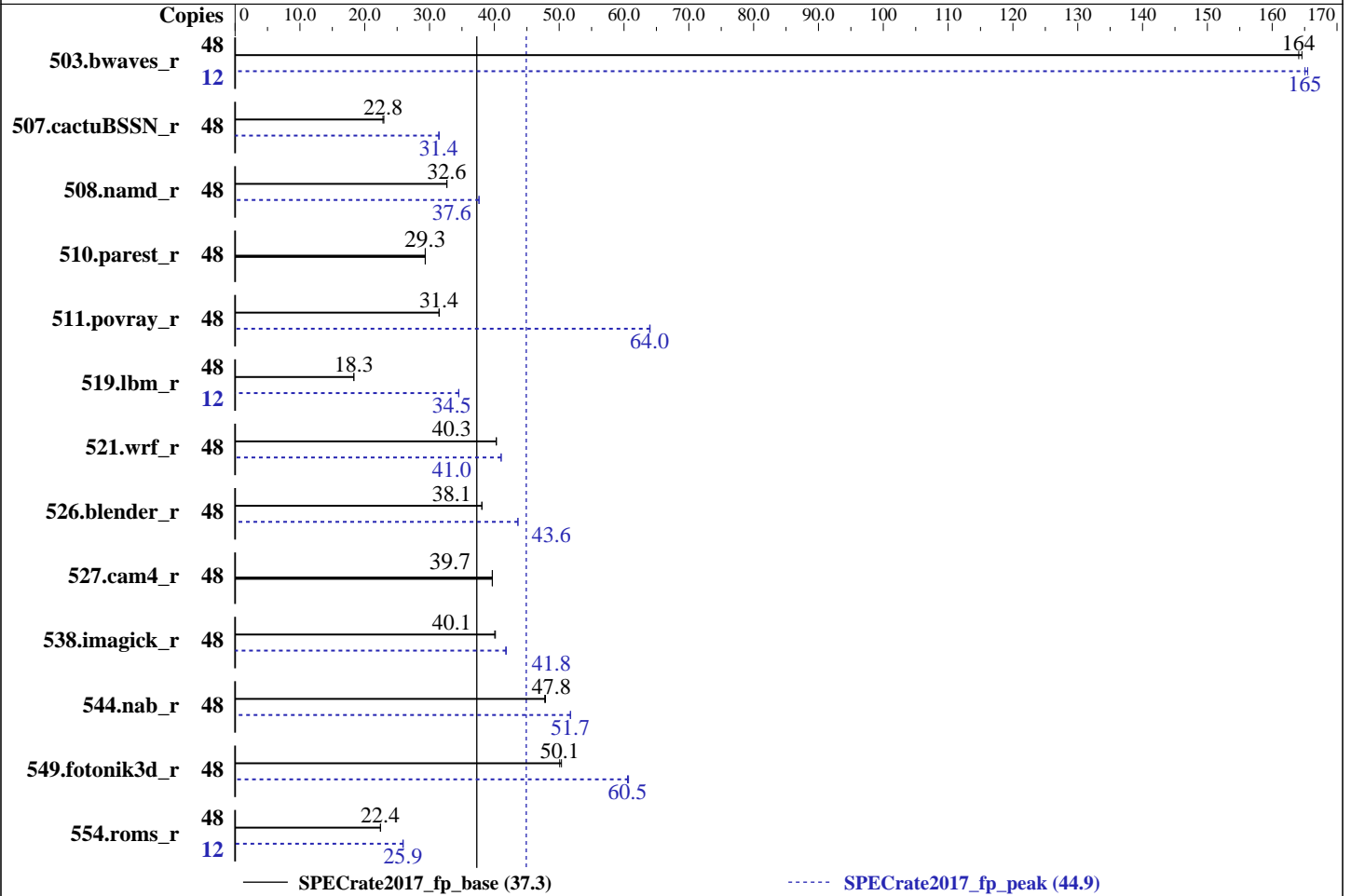
Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3
SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017



Hardware

CPU Name: SPARC64 XII
 Max MHz.: 3200
 Nominal: 3200
 Enabled: 6 cores, 1 chip, 8 threads/core
 Orderable: 1 CPU chip; 2, 3, 4, .. 6 cores
 Cache L1: 64 KB I + 64 KB D on chip per core
 L2: 512 KB I+D on chip per core
 L3: 16 MB I+D on chip per chip
 Other: None
 Memory: 512 GB (16 x 32 GB 2Rx4 PC4-2400T-R)
 Storage: 1 x 600 GB 10K RPM SAS (for system disk)
 Other: None

Software

OS: Oracle Solaris 11.3 SRU 24.4
 Compiler: C/C++/Fortran: Version 12.6 of Oracle Developer Studio
 Parallel: No
 Firmware: Fujitsu HCP Version 3040 released Oct-2017
 File System: tmpfs
 System State: Default
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other: None



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	48	2925	165	<u>2933</u>	<u>164</u>			12	<u>729</u>	<u>165</u>	727	165		
507.cactuBSSN_r	48	<u>2664</u>	<u>22.8</u>	2647	23.0			48	1930	31.5	<u>1935</u>	<u>31.4</u>		
508.namd_r	48	1395	32.7	<u>1397</u>	<u>32.6</u>			48	1212	37.6	<u>1212</u>	<u>37.6</u>		
510.parest_r	48	4278	29.4	<u>4282</u>	<u>29.3</u>			48	4278	29.4	<u>4282</u>	<u>29.3</u>		
511.povray_r	48	3557	31.5	<u>3565</u>	<u>31.4</u>			48	1751	64.0	<u>1753</u>	<u>64.0</u>		
519.lbm_r	48	<u>2763</u>	<u>18.3</u>	2760	18.3			12	<u>367</u>	<u>34.5</u>	366	34.5		
521.wrf_r	48	2666	40.3	<u>2670</u>	<u>40.3</u>			48	<u>2620</u>	<u>41.0</u>	2619	41.1		
526.blender_r	48	<u>1921</u>	<u>38.1</u>	1920	38.1			48	1675	43.7	<u>1676</u>	<u>43.6</u>		
527.cam4_r	48	<u>2116</u>	<u>39.7</u>	2115	39.7			48	<u>2116</u>	<u>39.7</u>	2115	39.7		
538.imagick_r	48	<u>2981</u>	<u>40.1</u>	2972	40.2			48	2853	41.8	<u>2859</u>	<u>41.8</u>		
544.nab_r	48	1687	47.9	<u>1691</u>	<u>47.8</u>			48	1561	51.7	<u>1562</u>	<u>51.7</u>		
549.fotonik3d_r	48	<u>3735</u>	<u>50.1</u>	3714	50.4			48	<u>3090</u>	<u>60.5</u>	3082	60.7		
554.roms_r	48	<u>3402</u>	<u>22.4</u>	3400	22.4			12	735	25.9	<u>737</u>	<u>25.9</u>		

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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

Shell Environments:

ulimit -s 131072 was used to limit the space consumed by the stack (and therefore make more space available to the heap).

The "Logical Domains Manager" service was turned off using the command "svcadm disable ldmd".

System Tunables:

(/etc/system parameters)

autoup = 86400

Causes pages older than the listed number of seconds to be written by fsflush.

doiflush = 0

Controls whether file system metadata syncs will be executed during fsflush invocations.

dopageflush = 0

Controls whether memory is examined for modified pages during fsflush invocations.

zfs:zfs_arc_max=1073741824

Determines the maximum size of the ZFS Adaptive Replacement Cache (ARC).



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

General Notes

File System:
tmpfs: output_root was used to put run directories in /tmp/cpu2017
zfs: operating system

Binaries were compiled on a system with 2x SPARC64 XII CPU + 1TB Memory using Oracle Solaris 11.3 SRU 24.4

Platform Notes

Sysinfo program /export/cpu2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on H1S-202-D0 Sat Dec 9 19:40:38 2017

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see
<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

From /usr/sbin/psrinfo
SPARC64-XII (chipid 0, clock 3200 MHz)
1 chips
48 threads
3200 MHz

From kstat: 6 cores

From prtconf: 521728 Megabytes

/etc/release:
Oracle Solaris 11.3 SPARC
uname -a:
SunOS H1S-202-D0 5.11 11.3 sun4v sparcsun4v

disk: df -h /export/cpu2017
Filesystem Size Used Available Capacity Mounted on
rpool/export 547G 61G 287G 18% /export

(End of data from sysinfo program)

Compiler Version Notes

=====
CXXC 508.namd_r(base) 510.parest_r(base)

CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3
SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Compiler Version Notes (Continued)

=====
CXXC 508.namd_r(peak) 510.parest_r(peak)

CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30

=====
CC 511.povray_r(base) 526.blender_r(base)

CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30

=====
CC 511.povray_r(peak) 526.blender_r(peak)

CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30

=====
FC 507.cactuBSSN_r(base)

CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30

=====
FC 507.cactuBSSN_r(peak)

CC: Studio 12.6 Sun C++ 5.15 SunOS_sparc 2017/05/30
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30

=====
CC 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)

cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30

=====
CC 519.lbm_r(peak) 538.imagick_r(peak) 544.nab_r(peak)

cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Compiler Version Notes (Continued)

```

=====
FC  503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
-----
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30
-----

=====
FC  503.bwaves_r(peak) 549.fotonik3d_r(peak) 554.roms_r(peak)
-----
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30
-----

=====
CC  521.wrf_r(base) 527.cam4_r(base)
-----
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30
-----

=====
CC  521.wrf_r(peak) 527.cam4_r(peak)
-----
f90: Studio 12.6 Fortran 95 8.8 SunOS_sparc 2017/05/30
cc: Studio 12.6 Sun C 5.15 SunOS_sparc 2017/05/30
-----

```

Base Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

f90

Benchmarks using both Fortran and C:

f90 cc

Benchmarks using both C and C++:

CC cc

Benchmarks using Fortran, C, and C++:

CC cc f90



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Base Portability Flags

```
503.bwaves_r: -D_FILE_OFFSET_BITS=64
507.cactuBSSN_r: -DSPEC_NO_C99_MATH_IN_CXX -D_FILE_OFFSET_BITS=64
508.namd_r: -D_FILE_OFFSET_BITS=64
510.parest_r: -D_FILE_OFFSET_BITS=64
511.povray_r: -D_FILE_OFFSET_BITS=64
519.lbm_r: -D_FILE_OFFSET_BITS=64
521.wrf_r: -D_FILE_OFFSET_BITS=64
526.blender_r: -DSPEC_NO_ISFINITE -xchar=u -D_FILE_OFFSET_BITS=64
527.cam4_r: -D_FILE_OFFSET_BITS=64
538.imagick_r: -D_FILE_OFFSET_BITS=64
544.nab_r: -D_FILE_OFFSET_BITS=64
549.fotonik3d_r: -D_FILE_OFFSET_BITS=64
554.roms_r: -D_FILE_OFFSET_BITS=64
```

Base Optimization Flags

C benchmarks:

```
-m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput -xalias_level=std
```

C++ benchmarks:

```
-m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput -xalias_level=compatible -std=c++03
-lfast
```

Fortran benchmarks:

```
-m32 -fast -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput
```

Benchmarks using both Fortran and C:

```
-m32 -fast(cc) -fast(f95) -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput -xalias_level=std
```

Benchmarks using both C and C++:

```
-m32 -fast(CC) -fast(cc) -xtarget=sparc64xii -xipo=2 -xpagesize=4M
-xsegment_align=4M -xthroughput -xalias_level=std
-xalias_level=compatible -std=c++03 -lfast
```

Benchmarks using Fortran, C, and C++:

```
-m32 -fast(CC) -fast(cc) -fast(f95) -xtarget=sparc64xii -xipo=2
-xpagesize=4M -xsegment_align=4M -xthroughput -xalias_level=std
-xalias_level=compatible -std=c++03 -lfast
```



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3
SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Base Other Flags

C benchmarks:

-xjobs=8

C++ benchmarks:

-xjobs=8

Fortran benchmarks:

-xjobs=8

Benchmarks using both Fortran and C:

-xjobs=8

Benchmarks using both C and C++:

-xjobs=8

Benchmarks using Fortran, C, and C++:

-xjobs=8

Peak Compiler Invocation

C benchmarks:

cc

C++ benchmarks:

CC

Fortran benchmarks:

f90

Benchmarks using both Fortran and C:

f90 cc

Benchmarks using both C and C++:

CC cc

Benchmarks using Fortran, C, and C++:

CC cc f90

Peak Portability Flags

503.bwaves_r: -D_FILE_OFFSET_BITS=64

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Peak Portability Flags (Continued)

```
507.cactuBSSN_r: -DSPEC_NO_C99_MATH_IN_CXX -DSPEC_LP64
508.namd_r: -D_FILE_OFFSET_BITS=64
510.parest_r: -D_FILE_OFFSET_BITS=64
511.povray_r: -D_FILE_OFFSET_BITS=64
519.lbm_r: -D_FILE_OFFSET_BITS=64
521.wrf_r: -D_FILE_OFFSET_BITS=64
526.blender_r: -DSPEC_NO_ISFINITE -xchar=u -D_FILE_OFFSET_BITS=64
527.cam4_r: -D_FILE_OFFSET_BITS=64
538.imagick_r: -DSPEC_LP64
544.nab_r: -D_FILE_OFFSET_BITS=64
549.fotonik3d_r: -D_FILE_OFFSET_BITS=64
554.roms_r: -D_FILE_OFFSET_BITS=64
```

Peak Optimization Flags

C benchmarks:

```
519.lbm_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -xO4
-xtarget=sparc64xplus -xprefetch=latx:0.9
-xprefetch_auto_type=indirect_array_access -xunroll=2
-W2,-Afully_unroll:always=on -Wc,-Qiselect-funcalign=64
```

```
538.imagick_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -xO4 -m64
-xtarget=sparc64xplus -xinline_param=level:3
-xprefetch=latx:0.7
-xprefetch_auto_type=indirect_array_access -xunroll=4
-Wc,-Qiselect-funcalign=4
```

```
544.nab_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -xO4 -xunroll=3
```

C++ benchmarks:

```
508.namd_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -xtarget=sparc64xplus
-xalias_level=compatible -Wc,-Qms_pipe+alldoall -std=c++03
```

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu
Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Dec-2017
Hardware Availability: Apr-2017
Software Availability: Jul-2017

Peak Optimization Flags (Continued)

510.parest_r: basepeak = yes

Fortran benchmarks:

```
503.bwaves_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -xinline_param=level:1
-xprefetch=latx:0.5
```

```
549.fotonik3d_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -xthroughput=no
-xprefetch=latx:0.8
-xprefetch_auto_type=indirect_array_access -W2,-Rujam
```

```
554.roms_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -xtarget=sparc64xplus
-xthroughput=no -xprefetch_auto_type=indirect_array_access
-xunroll=3 -W2,-Rujam -Wc,-Qiselect-rcpa=2
-Wc,-Qiselect-rsqrrta=2 -Wc,-Qiselect-rsqrrtalx=2
```

Benchmarks using both Fortran and C:

```
521.wrf_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast(cc) -fast(f95) -xtarget=sparc64xii -xipo=2
-xpagesize=256M -xsegment_align=256M -xthroughput
-xtarget=sparc64xplus
```

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

```
511.povray_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast(CC) -fast(cc) -xtarget=sparc64xii -xipo=2
-xpagesize=256M -xsegment_align=256M -xthroughput
-xtarget=sparc64xplus -xipo=1 -xalias_level=std
-xthroughput=no -xinline_param=level:3
-Wc,-Qiselect-rcpa=2 -W2,-Afully_unroll:always=on
-xalias_level=compatible -features=no%except
-features=no%rtti -Qoption iropt -Afully_unroll:always=on
-library=stlport4 -lfast
```

```
526.blender_r: -xprofile=collect:./feedback -xprofile=use:./feedback -m32
-fast(CC) -fast(cc) -xtarget=sparc64xii -xipo=2
-xpagesize=256M -xsegment_align=256M -xthroughput
```

(Continued on next page)



SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Fujitsu

Fujitsu SPARC M12-1

SPECrate2017_fp_base = 37.3

SPECrate2017_fp_peak = 44.9

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Dec-2017

Hardware Availability: Apr-2017

Software Availability: Jul-2017

Peak Optimization Flags (Continued)

526.blender_r (continued):

-library=stlport4

Benchmarks using Fortran, C, and C++:

```
-xprofile=collect:./feedback -xprofile=use:./feedback -m32 -fast(CC)
-fast(cc) -fast(f95) -xtarget=sparc64xii -xipo=2 -xpagesize=256M
-xsegment_align=256M -xthroughput -m64 -Wc,-Qiselect-funcalign=4
-Qoption cg -Qiselect-funcalign=4 -library=stlport4
```

Peak Other Flags

C benchmarks:

-xjobs=8

C++ benchmarks:

-xjobs=8

Fortran benchmarks:

-xjobs=8

Benchmarks using both Fortran and C:

-xjobs=8

Benchmarks using both C and C++:

-xjobs=8

Benchmarks using Fortran, C, and C++:

-xjobs=8

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/Oracle-Developer-Studio12.6.html>

<http://www.spec.org/cpu2017/flags/Fujitsu-M12-1.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Oracle-Developer-Studio12.6.xml>

<http://www.spec.org/cpu2017/flags/Fujitsu-M12-1.xml>

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2017 v1.0.2 on 2017-12-09 14:40:36-0500.

Report generated on 2018-10-31 14:17:44 by CPU2017 PDF formatter v6067.

Originally published on 2017-12-26.