



# SPEC® CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

CPU2017 License: 19

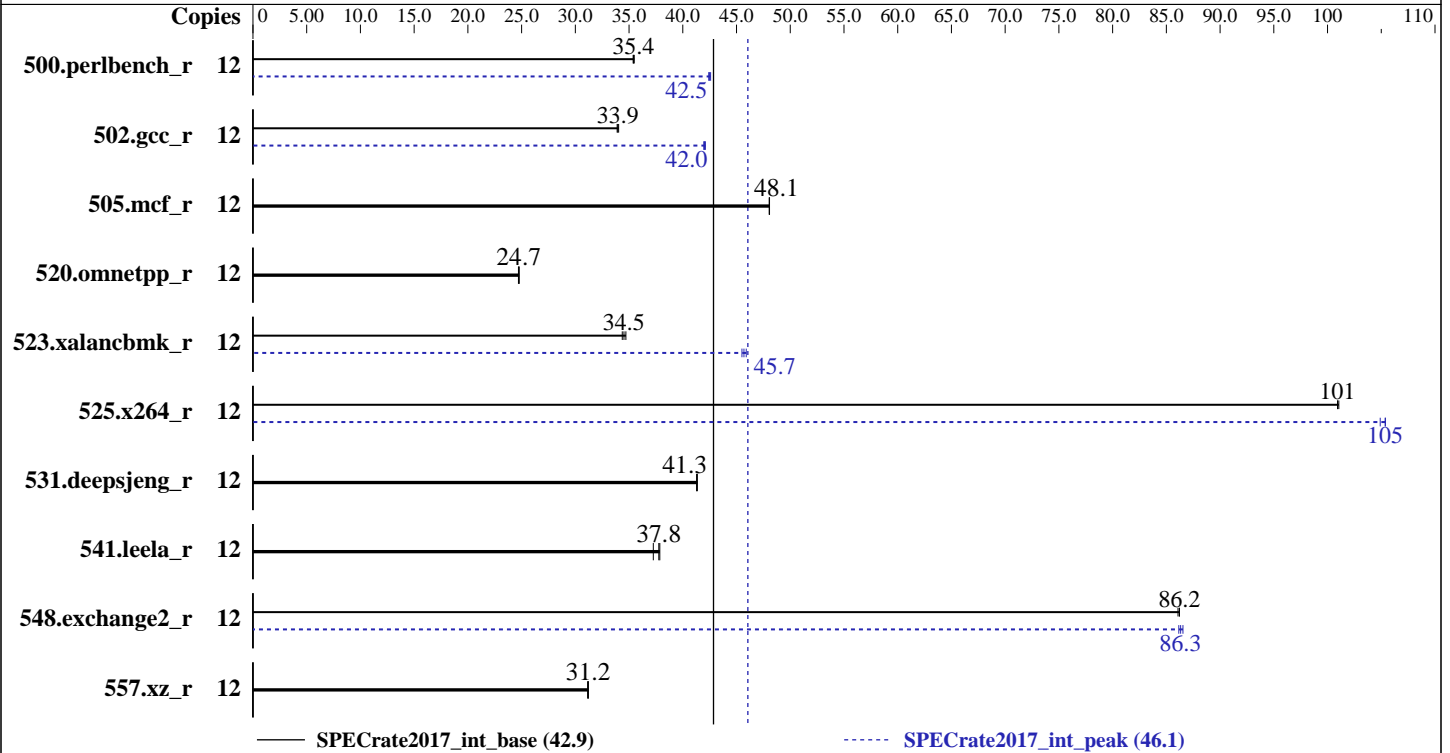
Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Oct-2018

Hardware Availability: Nov-2018

Software Availability: Sep-2018



### Hardware

CPU Name: Intel Xeon E-2176G  
 Max MHz.: 4700  
 Nominal: 3700  
 Enabled: 6 cores, 1 chip, 2 threads/core  
 Orderable: 1 chip  
 Cache L1: 32 KB I + 32 KB D on chip per core  
 L2: 256 KB I+D on chip per core  
 L3: 12 MB I+D on chip per chip  
 Other: None  
 Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)  
 Storage: 1 x SATA HDD, 1TB, 7200RPM  
 Other: None

### Software

OS: SUSE Linux Enterprise Server 15  
 4.12.14-23-default  
 Compiler: C/C++: Version 19.0.0.117 of Intel C/C++  
 Compiler for Linux;  
 Fortran: Version 19.0.0.117 of Intel Fortran  
 Compiler for Linux  
 Parallel: No  
 Firmware: Fujitsu BIOS Version V5.0.0.13 R1.4.0 for D3673-A1x. Released Nov-2018 tested as V5.0.0.13 R1.0.0 for D3673-A1x-Sep-2018  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 32/64-bit  
 Other: jemalloc memory allocator library V5.0.1



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

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

Test Date: Oct-2018  
Hardware Availability: Nov-2018  
Software Availability: Sep-2018

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	12	540	35.4	538	35.5	<b>539</b>	<b>35.4</b>	12	450	42.4	449	42.6	<b>450</b>	<b>42.5</b>
502.gcc_r	12	<b>501</b>	<b>33.9</b>	501	33.9	499	34.0	12	<b>404</b>	<b>42.0</b>	404	42.1	405	42.0
505.mcf_r	12	403	48.1	<b>404</b>	<b>48.1</b>	404	48.0	12	403	48.1	<b>404</b>	<b>48.1</b>	404	48.0
520.omnetpp_r	12	636	24.8	637	24.7	<b>636</b>	<b>24.7</b>	12	636	24.8	637	24.7	<b>636</b>	<b>24.7</b>
523.xalancbmk_r	12	<b>367</b>	<b>34.5</b>	369	34.4	365	34.7	12	278	45.5	<b>277</b>	<b>45.7</b>	276	45.9
525.x264_r	12	208	101	<b>208</b>	<b>101</b>	208	101	12	200	105	<b>199</b>	<b>105</b>	199	105
531.deepsjeng_r	12	<b>333</b>	<b>41.3</b>	333	41.3	333	41.4	12	<b>333</b>	<b>41.3</b>	333	41.3	333	41.4
541.leela_r	12	<b>526</b>	<b>37.8</b>	533	37.3	525	37.9	12	<b>526</b>	<b>37.8</b>	533	37.3	525	37.9
548.exchange2_r	12	365	86.1	365	86.2	<b>365</b>	<b>86.2</b>	12	363	86.5	365	86.2	<b>364</b>	<b>86.3</b>
557.xz_r	12	415	31.2	<b>415</b>	<b>31.2</b>	416	31.1	12	415	31.2	<b>415</b>	<b>31.2</b>	416	31.1

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

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

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"  
Process tuning settings:  
echo 500000 > /proc/sys/kernel/sched\_cfs\_bandwidth\_slice\_us

## General Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/home/Benchmark/speccpu2017-ic19-20181011/icc19-lib/ia32"  
LD\_LIBRARY\_PATH = "\$LD\_LIBRARY\_PATH:/home/Benchmark/speccpu2017-ic19-20181011/icc19-lib/intel64"  
LD\_LIBRARY\_PATH = "\$LD\_LIBRARY\_PATH:/home/Benchmark/speccpu2017-ic19-20181011/je5.0.1-32"  
LD\_LIBRARY\_PATH = "\$LD\_LIBRARY\_PATH:/home/Benchmark/speccpu2017-ic19-20181011/je5.0.1-64"

Binaries compiled on a system with 2x Intel Xeon Silver 4108 CPU + 384GB RAM  
memory using SUSE Linux Enterprise Server 12 SP2  
Transparent Huge Pages enabled by default  
Prior to runcpu invocation  
Filesystem page cache synced and cleared with:  
sync; echo 3 > /proc/sys/vm/drop\_caches  
jemalloc: configured and built at default for 32bit (i686) and 64bit (x86\_64) targets;  
jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5;  
jemalloc: sources available via jemalloc.net;

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

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

**Test Date:** Oct-2018  
**Hardware Availability:** Nov-2018  
**Software Availability:** Sep-2018

## General Notes (Continued)

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

## Platform Notes

BIOS configuration:  
Hardware Prefetcher = Disabled  
Adjacent Cache Line Prefetch = Disabled  
VT-d = Disabled  
Fan Control = Full  
Race To Halt (RTH) = Disabled  
DMI Link ASPM Control = L0s  
REFRESH\_2X\_MODE = 2- Enabled HOT only  
Sysinfo program /home/Benchmark/speccpu2017-ic19-20181011/bin/sysinfo  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f  
running on TX1330M4 Tue Oct 16 12:47:18 2018

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 /proc/cpuinfo  
model name : Intel(R) Xeon(R) E-2176G CPU @ 3.70GHz  
1 "physical id"s (chips)  
12 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)  
cpu cores : 6  
siblings : 12  
physical 0: cores 0 1 2 3 4 5

From lscpu:  
Architecture: x86\_64  
CPU op-mode(s): 32-bit, 64-bit  
Byte Order: Little Endian  
CPU(s): 12  
On-line CPU(s) list: 0-11  
Thread(s) per core: 2  
Core(s) per socket: 6  
Socket(s): 1  
NUMA node(s): 1

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2176G,  
3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

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

**Test Date:** Oct-2018  
**Hardware Availability:** Nov-2018  
**Software Availability:** Sep-2018

### Platform Notes (Continued)

Vendor ID: GenuineIntel  
CPU family: 6  
Model: 158  
Model name: Intel(R) Xeon(R) E-2176G CPU @ 3.70GHz  
Stepping: 10  
CPU MHz: 3700.000  
CPU max MHz: 4700.0000  
CPU min MHz: 800.0000  
BogoMIPS: 7392.00  
Virtualization: VT-x  
L1d cache: 32K  
L1i cache: 32K  
L2 cache: 256K  
L3 cache: 12288K  
NUMA node0 CPU(s): 0-11

Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov  
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp  
lm constant\_tsc art arch\_perfmon pebs bts rep\_good nopl xtopology nonstop\_tsc cpuid  
aperfperf tsc\_known\_freq pni pclmulqdq dtes64 monitor ds\_cpl vmx smx est tm2 ssse3  
sdbg fma cx16 xtpr pdcm pcid sse4\_1 sse4\_2 x2apic movbe popcnt tsc\_deadline\_timer  
aes xsave avx f16c rdrand lahf\_lm abm 3dnowprefetch cpuid\_fault epb invpcid\_single  
pti tpr\_shadow vnmi flexpriority ept vpid fsgsbase tsc\_adjust bmi1 hle avx2 smep  
bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt intel\_pt xsaveopt xsavec  
xgetbv1 xsaves ibpb ibrs stibp dtherm ida arat pln pts hwp hwp\_notify hwp\_act\_window  
hwp\_epp ssbd

/proc/cpuinfo cache data  
cache size : 12288 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.

available: 1 nodes (0)  
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11  
node 0 size: 63914 MB  
node 0 free: 63418 MB  
node distances:  
node 0  
0: 10

From /proc/meminfo  
MemTotal: 65448456 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

From /etc/\*release\* /etc/\*version\*  
os-release:  
NAME="SLES"

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2176G,  
3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Oct-2018

Hardware Availability: Nov-2018

Software Availability: Sep-2018

## Platform Notes (Continued)

```

VERSION="15"
VERSION_ID="15"
PRETTY_NAME="SUSE Linux Enterprise Server 15"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"

```

uname -a:

```

Linux TX1330M4 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b) x86_64
x86_64 x86_64 GNU/Linux

```

run-level 3 Oct 16 12:44

SPEC is set to: /home/Benchmark/speccpu2017-ic19-20181011

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   828G  102G  726G  13% /home

```

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

```

BIOS FUJITSU // American Megatrends Inc. V5.0.0.13 R1.0.0 for D3673-A1x
09/14/2018

```

Memory:

```

4x Samsung M391A2K43BB1-CTD 16 GB 2 rank 2667

```

(End of data from sysinfo program)

## Compiler Version Notes

```

=====
CC 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
525.x264_r(base, peak) 557.xz_r(base, peak)
=====

```

icc (ICC) 19.0.0.117 20180804

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

```

=====
CC 500.perlbench_r(peak) 502.gcc_r(peak)
=====

```

icc (ICC) 19.0.0.117 20180804

Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

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

Test Date: Oct-2018  
Hardware Availability: Nov-2018  
Software Availability: Sep-2018

## Compiler Version Notes (Continued)

```

=====
CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
      541.leela_r(base)
-----
icpc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
-----

=====
CXXC 520.omnetpp_r(peak) 523.xalancbmk_r(peak) 531.deepsjeng_r(peak)
      541.leela_r(peak)
-----
icpc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
-----

=====
FC 548.exchange2_r(base, peak)
-----
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
-----

```

## Base Compiler Invocation

C benchmarks:  
icc -m64 -std=c11

C++ benchmarks:  
icpc -m64

Fortran benchmarks:  
ifort -m64

## Base Portability Flags

```

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64

```

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY TX1330 M4, Intel Xeon E-2176G,  
3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

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

Test Date: Oct-2018  
Hardware Availability: Nov-2018  
Software Availability: Sep-2018

## Base Portability Flags (Continued)

541.leela\_r: -DSPEC\_LP64  
548.exchange2\_r: -DSPEC\_LP64  
557.xz\_r: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

Fortran benchmarks:

-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte  
-L/usr/local/je5.0.1-64/lib -ljemalloc

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64 -std=c11

502.gcc\_r: icc -m32 -std=c11 -L/opt/intel/compilers\_and\_libraries\_2019/linux/lib/ia32

C++ benchmarks (except as noted below):

icpc -m64

523.xalancbmk\_r: icpc -m32 -L/opt/intel/compilers\_and\_libraries\_2019/linux/lib/ia32

Fortran benchmarks:

ifort -m64

## Peak Portability Flags

500.perlbench\_r: -DSPEC\_LP64 -DSPEC\_LINUX\_X64  
502.gcc\_r: -D\_FILE\_OFFSET\_BITS=64  
505.mcf\_r: -DSPEC\_LP64

(Continued on next page)



# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY TX1330 M4, Intel Xeon E-2176G,  
3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

CPU2017 License: 19

Test Sponsor: Fujitsu

Tested by: Fujitsu

Test Date: Oct-2018

Hardware Availability: Nov-2018

Software Availability: Sep-2018

## Peak Portability Flags (Continued)

```
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -D_FILE_OFFSET_BITS=64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
```

## Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-fno-strict-overflow -L/usr/local/je5.0.1-64/lib
-ljemalloc
```

```
502.gcc_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-L/usr/local/je5.0.1-32/lib -ljemalloc
```

505.mcf\_r: basepeak = yes

```
525.x264_r: -w1,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -fno-alias
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

557.xz\_r: basepeak = yes

C++ benchmarks:

520.omnetpp\_r: basepeak = yes

```
523.xalancbmk_r: -w1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-L/usr/local/je5.0.1-32/lib -ljemalloc
```

531.deepsjeng\_r: basepeak = yes

541.leela\_r: basepeak = yes

Fortran benchmarks:

```
-w1,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
```

(Continued on next page)





# SPEC CPU2017 Integer Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY TX1330 M4, Intel Xeon E-2176G,  
3.70GHz

SPECrate2017\_int\_base = 42.9

SPECrate2017\_int\_peak = 46.1

**CPU2017 License:** 19

**Test Sponsor:** Fujitsu

**Tested by:** Fujitsu

**Test Date:** Oct-2018

**Hardware Availability:** Nov-2018

**Software Availability:** Sep-2018

## Peak Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-L/usr/local/je5.0.1-64/lib -ljemalloc
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.html>

<http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevA.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml>

<http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevA.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](mailto:info@spec.org).

Tested with SPEC CPU2017 v1.0.2 on 2018-10-15 23:47:17-0400.

Report generated on 2018-11-13 15:18:32 by CPU2017 PDF formatter v6067.

Originally published on 2018-11-13.