



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Fujitsu

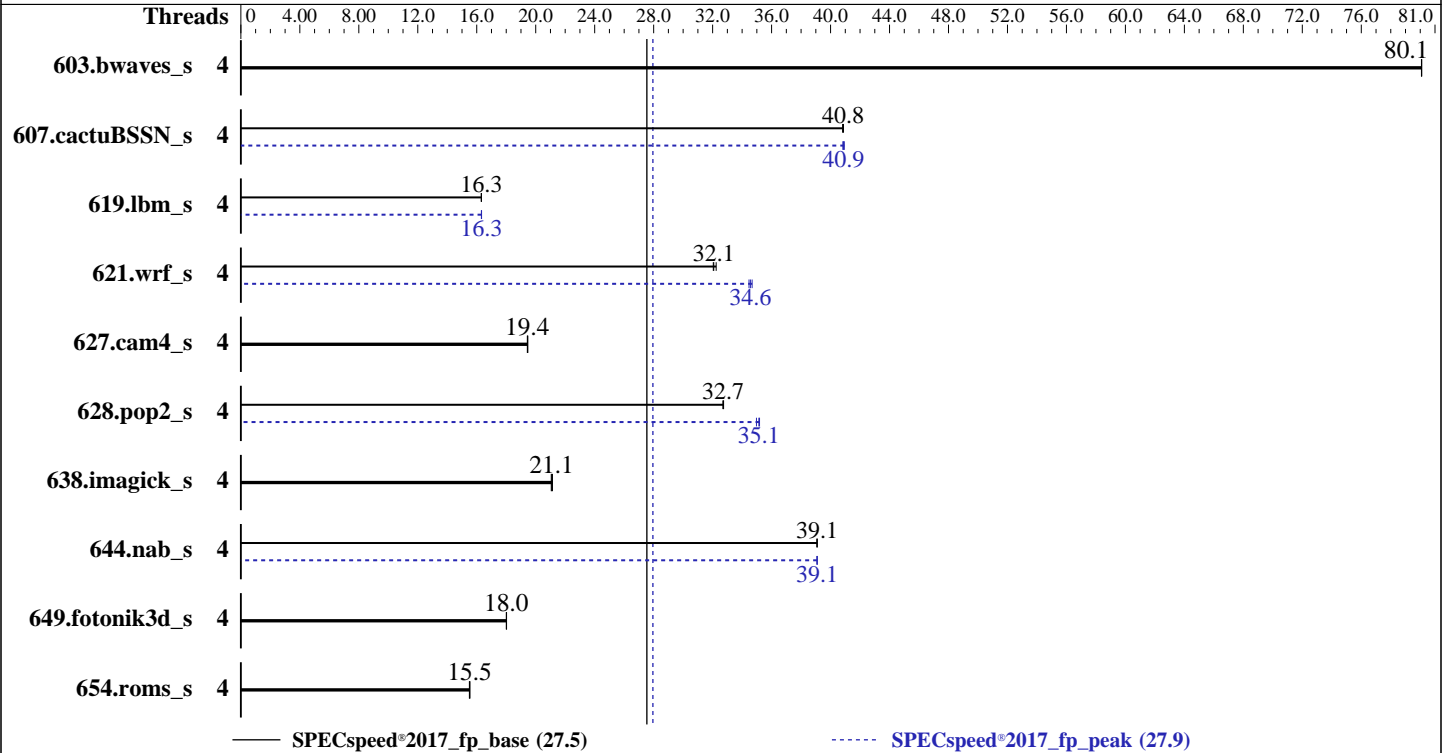
PRIMERGY TX1330 M4, Intel Xeon E-2274G, 4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

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

Test Date: Nov-2019  
Hardware Availability: Oct-2019  
Software Availability: Sep-2019



### Hardware

CPU Name: Intel Xeon E-2274G  
Max MHz: 4900  
Nominal: 4000  
Enabled: 4 cores, 1 chip  
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: 8 MB I+D on chip per chip  
Other: None  
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)  
Storage: 1 x SATA M.2 SSD, 480 GB  
Other: None

### Software

OS: Red Hat Enterprise Linux Server release 7.6 (Maipo)  
3.10.0-957.el7.x86\_64  
Compiler: C/C++: Version 19.0.5.281 of Intel C/C++ Compiler for Linux;  
Fortran: Version 19.0.5.281 of Intel Fortran Compiler for Linux  
Parallel: Yes  
Firmware: Fujitsu BIOS Version V5.0.0.13 R1.12.0 for D3673-A1x. Released Sep-2019  
File System: xfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other: None  
Power Management: BIOS set to prefer performance at the cost of additional power usage



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

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

Test Date: Nov-2019  
Hardware Availability: Oct-2019  
Software Availability: Sep-2019

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	4	737	80.1	737	80.1	<u>737</u>	<u>80.1</u>	4	737	80.1	737	80.1	<u>737</u>	<u>80.1</u>
607.cactuBSSN_s	4	408	40.8	<b>408</b>	<b>40.8</b>	408	40.9	4	407	40.9	408	40.8	<b>408</b>	<b>40.9</b>
619.lbm_s	4	321	16.3	321	16.3	<u>321</u>	<b>16.3</b>	4	321	16.3	<u>321</u>	<b>16.3</b>	321	16.3
621.wrf_s	4	410	32.2	<b>412</b>	<u>32.1</u>	413	32.0	4	<b>383</b>	<b>34.6</b>	381	34.7	384	34.5
627.cam4_s	4	455	19.5	456	19.4	<b>456</b>	<b>19.4</b>	4	455	19.5	456	19.4	<b>456</b>	<b>19.4</b>
628.pop2_s	4	363	32.7	<b>363</b>	<u>32.7</u>	363	32.7	4	339	35.0	<b>338</b>	<b>35.1</b>	337	35.2
638.imagick_s	4	<b>684</b>	<b>21.1</b>	682	21.1	685	21.1	4	<b>684</b>	<b>21.1</b>	682	21.1	685	21.1
644.nab_s	4	<b>447</b>	<b>39.1</b>	447	39.1	447	39.1	4	447	39.1	447	39.1	<b>447</b>	<b>39.1</b>
649.fotonik3d_s	4	506	18.0	<b>506</b>	<b>18.0</b>	506	18.0	4	506	18.0	<b>506</b>	<b>18.0</b>	506	18.0
654.roms_s	4	<b>1014</b>	<b>15.5</b>	1016	15.5	1014	15.5	4	<b>1014</b>	<b>15.5</b>	1016	15.5	1014	15.5

SPECspeed®2017\_fp\_base = **27.5**

SPECspeed®2017\_fp\_peak = **27.9**

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

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact"  
LD\_LIBRARY\_PATH = "/home/Benchmark/speccpu2017-1.1.0/lib/intel64"  
OMP\_STACKSIZE = "192M"

## General Notes

Environment variables set by runcpu before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact"  
LD\_LIBRARY\_PATH = "/home/Benchmark/speccpu2017-1.1.0/lib/intel64"  
OMP\_STACKSIZE = "192M"  
echo 100000000 > sched\_min\_granularity\_ns  
echo 150000000 > sched\_wakeup\_granularity\_ns  
echo 240000000 > sched\_latency\_ns  
Binaries compiled on a system with 1x Intel Xeon E-2288G CPU + 64 GB RAM  
memory using Redhat Enterprise Linux 7.6  
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  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHZ

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

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

**Test Date:** Nov-2019  
**Hardware Availability:** Oct-2019  
**Software Availability:** Sep-2019

### General Notes (Continued)

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:

Energy Efficient Turbo = Disabled  
Fan Control = Full  
Hyper-Threading = Disabled  
SW Guard Extensions (SGX) = Enabled

Sysinfo program /home/Benchmark/speccpu2017-1.1.0/bin/sysinfo  
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011  
running on localhost.localdomain Tue Nov 26 14:42:03 2019

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-2274G CPU @ 4.00GHz
 1 "physical id"s (chips)
 4 "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      : 4
siblings       : 4
physical 0:    : cores 0 1 2 3
```

From lscpu:

```
Architecture:    x86_64
CPU op-mode(s):  32-bit, 64-bit
Byte Order:      Little Endian
CPU(s):          4
On-line CPU(s) list:  0-3
Thread(s) per core:  1
Core(s) per socket:  4
Socket(s):       1
NUMA node(s):    1
Vendor ID:       GenuineIntel
CPU family:      6
Model:           158
Model name:      Intel(R) Xeon(R) E-2274G CPU @ 4.00GHz
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

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

**Test Date:** Nov-2019  
**Hardware Availability:** Oct-2019  
**Software Availability:** Sep-2019

### Platform Notes (Continued)

Stepping: 10  
CPU MHz: 4599.609  
CPU max MHz: 4900.0000  
CPU min MHz: 800.0000  
BogoMIPS: 8016.00  
Virtualization: VT-x  
L1d cache: 32K  
L1i cache: 32K  
L2 cache: 256K  
L3 cache: 8192K  
NUMA node0 CPU(s): 0-3

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  
aperfmpperf eagerfpu 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 epb intel\_pt ssbd ibrs ibpb stibp  
tpr\_shadow vnmi flexpriority ept vpid fsgsbase tsc\_adjust bmi1 hle avx2 smep bmi2  
erms invpcid rtm mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1 dtherm ida  
arat pln pts hwp hwp\_notify hwp\_act\_window hwp\_epp spec\_ctrl intel\_stibp flush\_lld

```
/proc/cpuinfo cache data
cache size : 8192 KB
```

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

```
From /proc/meminfo
MemTotal: 65596640 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.6 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.6"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.6 (Maipo)"
redhat-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.6:ga:server
```

```
uname -a:
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

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

**Test Date:** Nov-2019  
**Hardware Availability:** Oct-2019  
**Software Availability:** Sep-2019

### Platform Notes (Continued)

Linux localhost.localdomain 3.10.0-957.el7.x86\_64 #1 SMP Thu Oct 4 20:48:51 UTC 2018  
x86\_64 x86\_64 x86\_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault):	Mitigation: PTE Inversion; VMX: SMT disabled, L1D conditional cache flushes
Microarchitectural Data Sampling:	No status reported
CVE-2017-5754 (Meltdown):	Mitigation: PTI
CVE-2018-3639 (Speculative Store Bypass):	Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):	Mitigation: Load fences, __user pointer sanitization
CVE-2017-5715 (Spectre variant 2):	Mitigation: IBRS (kernel)

run-level 3 Nov 26 14:40

SPEC is set to: /home/Benchmark/speccpu2017-1.1.0

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-home	xfs	392G	33G	359G	9%	/home

From /sys/devices/virtual/dmi/id

```

BIOS: FUJITSU // American Megatrends Inc. V5.0.0.13 R1.12.0 for D3673-A1x
      09/06/2019
Vendor: FUJITSU
Product: PRIMERGY TX1330 M4
Serial: YMJLXXXXXX

```

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.

Memory:  
4x SK Hynix HMA82GU7CJR8N-VK 16 GB 2 rank 2667

(End of data from sysinfo program)

### Compiler Version Notes

```

=====
C          | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
          | 644.nab_s(base, peak)
-----

```

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.5.281 Build 20190815  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Fujitsu

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

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

**Test Date:** Nov-2019  
**Hardware Availability:** Oct-2019  
**Software Availability:** Sep-2019

## Compiler Version Notes (Continued)

=====  
C++, C, Fortran | 607.cactuBSSN\_s(base, peak)  
=====

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.5.281 Build 20190815  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.  
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.5.281 Build 20190815  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.  
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.5.281 Build 20190815  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====  
Fortran | 603.bwaves\_s(base, peak) 649.fotonik3d\_s(base, peak)  
| 654.roms\_s(base, peak)  
=====

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.5.281 Build 20190815  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====  
Fortran, C | 621.wrf\_s(base, peak) 627.cam4\_s(base, peak)  
| 628.pop2\_s(base, peak)  
=====

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.5.281 Build 20190815  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.  
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.5.281 Build 20190815  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:  
icc -m64 -std=c11

Fortran benchmarks:  
ifort -m64

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

**CPU2017 License:** 19

**Test Sponsor:** Fujitsu

**Tested by:** Fujitsu

**Test Date:** Nov-2019

**Hardware Availability:** Oct-2019

**Software Availability:** Sep-2019

## Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

```
ifort -m64 icc -m64 -std=c11
```

Benchmarks using Fortran, C, and C++:

```
icpc -m64 icc -m64 -std=c11 ifort -m64
```

## Base Portability Flags

```
603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64
```

## Base Optimization Flags

C benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
```

Fortran benchmarks:

```
-DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp
-nostandard-realloc-lhs
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs
```

Benchmarks using Fortran, C, and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs
```



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

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

**Test Date:** Nov-2019  
**Hardware Availability:** Oct-2019  
**Software Availability:** Sep-2019

## Peak Compiler Invocation

C benchmarks:

```
icc -m64 -std=c11
```

Fortran benchmarks:

```
ifort -m64
```

Benchmarks using both Fortran and C:

```
ifort -m64 icc -m64 -std=c11
```

Benchmarks using Fortran, C, and C++:

```
icpc -m64 icc -m64 -std=c11 ifort -m64
```

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

```
619.lbm_s: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp  
-DSPEC_OPENMP
```

```
638.imagick_s: basepeak = yes
```

```
644.nab_s: Same as 619.lbm_s
```

Fortran benchmarks:

```
603.bwaves_s: basepeak = yes
```

```
649.fotonik3d_s: basepeak = yes
```

```
654.roms_s: basepeak = yes
```

Benchmarks using both Fortran and C:

```
621.wrf_s: -prof-gen(pass 1) -prof-use(pass 2) -O2 -xCORE-AVX2  
-qopt-prefetch -ipo -O3 -ffinite-math-only -no-prec-div  
-qopt-mem-layout-trans=4 -DSPEC_SUPPRESS_OPENMP -qopenmp  
-DSPEC_OPENMP -nostandard-realloc-lhs
```

(Continued on next page)





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Fujitsu**

PRIMERGY TX1330 M4, Intel Xeon E-2274G,  
4.00 GHz

SPECspeed®2017\_fp\_base = 27.5

SPECspeed®2017\_fp\_peak = 27.9

**CPU2017 License:** 19

**Test Sponsor:** Fujitsu

**Tested by:** Fujitsu

**Test Date:** Nov-2019

**Hardware Availability:** Oct-2019

**Software Availability:** Sep-2019

## Peak Optimization Flags (Continued)

627.cam4\_s: basepeak = yes

628.pop2\_s: Same as 621.wrf\_s

Benchmarks using Fortran, C, and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP  
-nostandard-realloc-lhs
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-09.html>

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

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-09.xml>

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

SPEC CPU and SPECspeed are registered trademarks 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 CPU®2017 v1.1.0 on 2019-11-26 00:42:03-0500.

Report generated on 2020-02-04 17:55:20 by CPU2017 PDF formatter v6255.

Originally published on 2020-02-04.