



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## xFusion

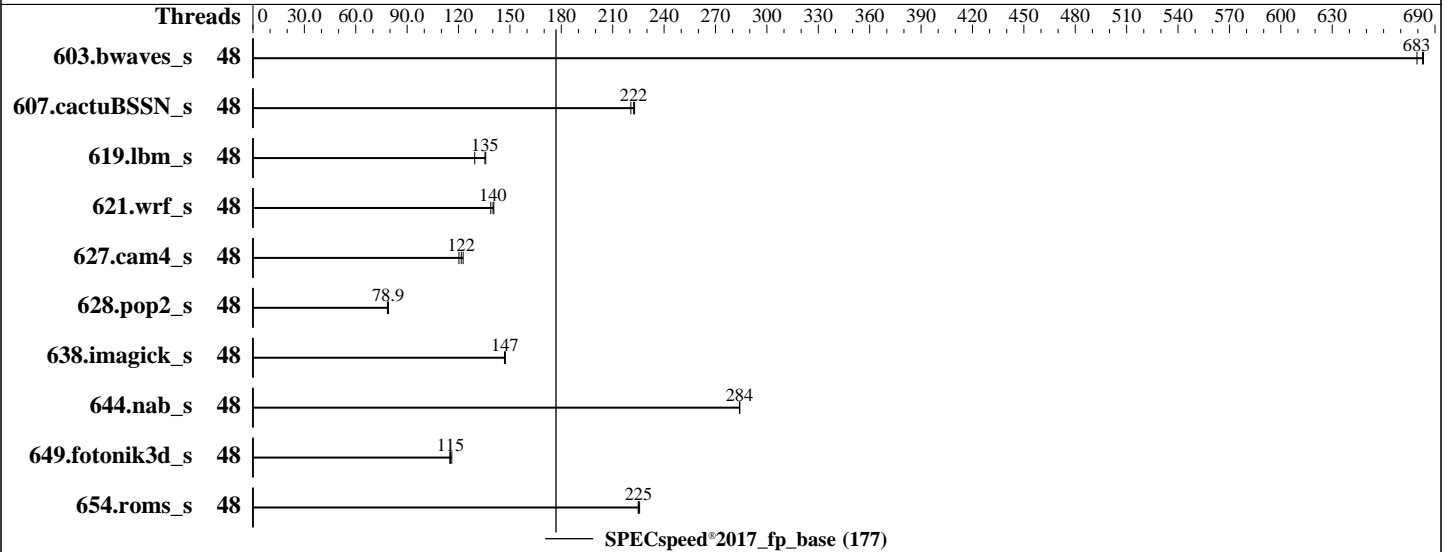
SPECspeed®2017\_fp\_base = 177

### xFusion 1288H V6 (Intel Xeon Gold 5318S)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 6488  
Test Sponsor: xFusion  
Tested by: xFusion

Test Date: May-2022  
Hardware Availability: Apr-2021  
Software Availability: Sep-2021



### Hardware

CPU Name: Intel Xeon Gold 5318S  
Max MHz: 3400  
Nominal: 2100  
Enabled: 48 cores, 2 chips  
Orderable: 1,2 chips  
Cache L1: 32 KB I + 48 KB D on chip per core  
L2: 1.25 MB I+D on chip per core  
L3: 36 MB I+D on chip per chip  
Other: None  
Memory: 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R, running at 2933)  
Storage: 1 x 960 GB SATA SSD  
Other: None

### Software

OS: Red Hat Enterprise Linux release 8.4 (Ootpa) 4.18.0-305.el8.x86\_64  
Compiler: Fortran: Version 2021.4.0 of Intel Fortran Compiler  
Classic Build 20210910 for Linux;  
C/C++: Version 2021.4.0 of Intel C/C++ Compiler  
Classic Build 20210910 for Linux  
Parallel: Yes  
Firmware: Version 0.95 Released Dec-2021  
File System: xfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: Not Applicable  
Other: jemalloc memory allocator V5.0.1  
Power Management: BIOS and OS set to prefer performance at the cost of additional power usage



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## xFusion

SPECSpeed®2017\_fp\_base = 177

## xFusion 1288H V6 (Intel Xeon Gold 5318S)

SPECSpeed®2017\_fp\_peak = Not Run

CPU2017 License: 6488  
Test Sponsor: xFusion  
Tested by: xFusion

Test Date: May-2022  
Hardware Availability: Apr-2021  
Software Availability: Sep-2021

### Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	48	86.3	683	<b>86.4</b>	<b>683</b>	86.8	679							
607.cactuBSSN_s	48	74.8	223	75.6	221	<b>75.0</b>	<b>222</b>							
619.lbm_s	48	38.5	136	<b>38.7</b>	<b>135</b>	40.5	129							
621.wrf_s	48	<b>94.4</b>	<b>140</b>	94.1	141	95.3	139							
627.cam4_s	48	73.7	120	72.2	123	<b>72.9</b>	<b>122</b>							
628.pop2_s	48	151	78.5	150	79.1	<b>150</b>	<b>78.9</b>							
638.imagick_s	48	97.9	147	98.3	147	<b>98.0</b>	<b>147</b>							
644.nab_s	48	61.5	284	<b>61.5</b>	<b>284</b>	61.5	284							
649.fotonik3d_s	48	79.3	115	78.5	116	<b>79.1</b>	<b>115</b>							
654.roms_s	48	<b>70.0</b>	<b>225</b>	69.8	226	70.0	225							

SPECSpeed®2017\_fp\_base = 177

SPECSpeed®2017\_fp\_peak = Not Run

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 = "/spec2017/lib/intel64:/spec2017/je5.0.1-64"  
MALLOC\_CONF = "retain:true"  
OMP\_STACKSIZE = "192M"

### General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Redhat Enterprise Linux 8.0  
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  
NA: 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.  
jemalloc, a general purpose malloc implementation  
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 177

## xFusion 1288H V6 (Intel Xeon Gold 5318S)

SPECspeed®2017\_fp\_peak = Not Run

**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** May-2022  
**Hardware Availability:** Apr-2021  
**Software Availability:** Sep-2021

### General Notes (Continued)

sources available from [jemalloc.net](http://jemalloc.net) or <https://github.com/jemalloc/jemalloc/releases>

### Platform Notes

BIOS configuration:  
Performance Profile Set to Load Balance  
Hyper-Threading Set to Disable

Sysinfo program /spec2017/bin/sysinfo  
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d  
running on localhost.localdomain Mon May 23 03:52:51 2022

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) Gold 5318S CPU @ 2.10GHz
 2 "physical id"s (chips)
 48 "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      : 24
siblings       : 24
physical 0:    cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
physical 1:    cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
```

```
From lscpu from util-linux 2.32.1:
Architecture:    x86_64
CPU op-mode(s):  32-bit, 64-bit
Byte Order:      Little Endian
CPU(s):          48
On-line CPU(s) list: 0-47
Thread(s) per core: 1
Core(s) per socket: 24
Socket(s):       2
NUMA node(s):   2
Vendor ID:       GenuineIntel
BIOS Vendor ID:  Intel(R) Corporation
CPU family:      6
Model:          106
Model name:      Intel(R) Xeon(R) Gold 5318S CPU @ 2.10GHz
BIOS Model name: Intel(R) Xeon(R) Gold 5318S CPU @ 2.10GHz
Stepping:       6
CPU MHz:        2539.481
CPU max MHz:    2101.0000
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 177

**xFusion 1288H V6 (Intel Xeon Gold 5318S)**

SPECspeed®2017\_fp\_peak = Not Run

**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** May-2022  
**Hardware Availability:** Apr-2021  
**Software Availability:** Sep-2021

## Platform Notes (Continued)

```

CPU min MHz:      800.0000
BogoMIPS:         4200.00
Virtualization:   VT-x
L1d cache:        48K
L1i cache:        32K
L2 cache:         1280K
L3 cache:         36864K
NUMA node0 CPU(s): 0-23
NUMA node1 CPU(s): 24-47
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
aperfmpperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 invpcid_single ssbd
mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad
fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq
rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw
avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local split_lock_detect wbnoinvd dtherm ida arat pln pts avx512vbmi umip pku
ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
avx512_vpopcntdq la57 rdpid fsrm md_clear pconfig flush_lld arch_capabilities

```

```

/proc/cpuinfo cache data
cache size : 36864 KB

```

```

From numactl --hardware
WARNING: a numactl 'node' might or might not correspond to a physical chip.
available: 2 nodes (0-1)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
node 0 size: 257050 MB
node 0 free: 253488 MB
node 1 cpus: 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
node 1 size: 258003 MB
node 1 free: 256466 MB
node distances:
node  0  1
 0:  10  20
 1:  20  10

```

```

From /proc/meminfo
MemTotal:      527414736 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

/sbin/tuned-adm active
Current active profile: throughput-performance

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 177

### xFusion 1288H V6 (Intel Xeon Gold 5318S)

SPECspeed®2017\_fp\_peak = Not Run

**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** May-2022  
**Hardware Availability:** Apr-2021  
**Software Availability:** Sep-2021

## Platform Notes (Continued)

```
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance
```

```
From /etc/*release* /etc/*version*
```

```
os-release:
```

```
NAME="Red Hat Enterprise Linux"
VERSION="8.4 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.4"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.4 (Ootpa)"
ANSI_COLOR="0;31"
```

```
redhat-release: Red Hat Enterprise Linux release 8.4 (Ootpa)
```

```
system-release: Red Hat Enterprise Linux release 8.4 (Ootpa)
```

```
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.4:ga
```

```
uname -a:
```

```
Linux localhost.localdomain 4.18.0-305.el8.x86_64 #1 SMP Thu Apr 29 08:54:30 EDT 2021
x86_64 x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):	Not affected
CVE-2018-3620 (L1 Terminal Fault):	Not affected
Microarchitectural Data Sampling:	Not affected
CVE-2017-5754 (Meltdown):	Not affected
CVE-2018-3639 (Speculative Store Bypass):	Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):	Mitigation: usercopy/swapgs barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2):	Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling):	Not affected
CVE-2019-11135 (TSX Asynchronous Abort):	Not affected

```
run-level 3 May 23 01:51
```

```
SPEC is set to: /spec2017
```

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda3	xfs	859G	71G	789G	9%	/

```
From /sys/devices/virtual/dmi/id
Vendor: XFUSION
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 177

### xFusion 1288H V6 (Intel Xeon Gold 5318S)

SPECspeed®2017\_fp\_peak = Not Run

**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** May-2022  
**Hardware Availability:** Apr-2021  
**Software Availability:** Sep-2021

## Platform Notes (Continued)

Product: 1288H V6  
Product Family: Whitley  
Serial: Serial

Additional information from dmidecode 3.2 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:**

16x Samsung M393A4K40DB3-CWE 32 GB 2 rank 3200, configured at 2933

**BIOS:**

BIOS Vendor: INSYDE Corp.  
BIOS Version: 0.95  
BIOS Date: 12/22/2021  
BIOS Revision: 0.95

(End of data from sysinfo program)

## Compiler Version Notes

=====  
C | 619.lbm\_s(base) 638.imagick\_s(base) 644.nab\_s(base)  
=====

Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.4.0 Build 20210910\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.

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

Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.4.0 Build 20210910\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.  
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.4.0 Build 20210910\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.  
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.4.0 Build 20210910\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.

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

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 177

**xFusion 1288H V6 (Intel Xeon Gold 5318S)**

SPECspeed®2017\_fp\_peak = Not Run

**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** May-2022  
**Hardware Availability:** Apr-2021  
**Software Availability:** Sep-2021

## Compiler Version Notes (Continued)

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
Intel(R) 64, Version 2021.4.0 Build 20210910\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.

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

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
Intel(R) 64, Version 2021.4.0 Build 20210910\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.  
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)  
64, Version 2021.4.0 Build 20210910\_000000  
Copyright (C) 1985-2021 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:  
icc

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
ifort icc

Benchmarks using Fortran, C, and C++:  
icpc icc ifort

## 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



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 177

### xFusion 1288H V6 (Intel Xeon Gold 5318S)

SPECspeed®2017\_fp\_peak = Not Run

**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** May-2022  
**Hardware Availability:** Apr-2021  
**Software Availability:** Sep-2021

## Base Optimization Flags

C benchmarks:

```
-m64 -std=c11 -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-mbranches-within-32B-boundaries
```

Fortran benchmarks:

```
-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -ipo -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs
-mbranches-within-32B-boundaries -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc
```

Benchmarks using both Fortran and C:

```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp
-DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:

```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp
-DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

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

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.html](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.html)  
<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-ICX-V1.1.html>

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

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.xml](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml)  
<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-ICX-V1.1.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 v1.1.8 on 2022-05-23 03:52:50-0400.  
Report generated on 2022-06-07 15:46:51 by CPU2017 PDF formatter v6442.  
Originally published on 2022-06-07.