

# SPEC® CPU2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**My Corporation**

(Test Sponsor: Intel Corporation)

SPECspeed2017\_fp\_base = 7.01

SPECspeed2017\_fp\_peak = Not Run

**CPU2017 License:** 13

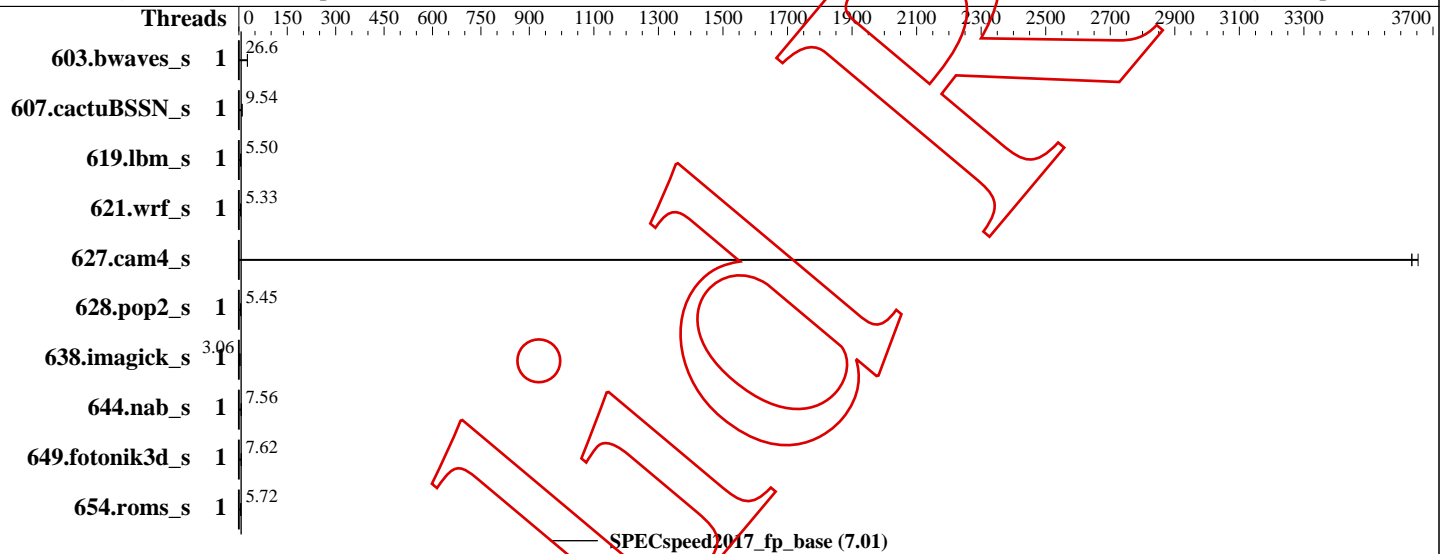
**Test Sponsor:** Intel Corporation

**Tested by:** Intel Corporation

**Test Date:** Apr-2020

**Hardware Availability:**

**Software Availability:** Sep-2017



## Hardware

CPU Name: Genuine Intel 0000  
Max MHz.:  
Nominal:  
Enabled: cores, 1 chip, threads/core  
Orderable:  
Cache L1:  
L2:  
L3:  
Other:  
Memory: 15.431 GB fixme: If using DDR3, format is:  
'N GB (M x N GB nRxn PCn-nnnnnR-n, ECC)'  
Storage: 391 GB add more disk info here  
Other:

## Software

OS: Fedora release 31 (Thirty One)  
5.5.0-cet+  
Compiler: C/C++: Version 8.1.0 of GNU C/C++  
Compiler for Linux;  
Fortran: Version 8.1.0 of GNU Fortran  
Compiler for Linux  
Parallel: Yes  
Firmware: --  
File System: ext4  
System State: Run level 3 (add definition here)  
Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other: --

## Errors

'reportable' flag not set during run  
627.cam4\_s (base) had invalid runs!  
Run of 627.cam4\_s (base) was not valid; status is RE  
Unknown flags were used! See  
<https://www.spec.org/cpu2017/Docs/runcpu.html#flagsurl>  
for information about how to get rid of this error.

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## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	1	2231	26.4	<u>2218</u>	<u>26.6</u>	2214	26.6							
607.cactuBSSN_s	1	1747	9.54	<u>1747</u>	<u>9.54</u>	1750	9.53							
619.lbm_s	1	958	5.47	<u>953</u>	<u>5.50</u>	952	5.50							
621.wrf_s	1	2483	5.33	<u>2482</u>	<u>5.33</u>	2480	5.33							
627.cam4_s	1	2.44	0.00	2.44	0.00	2.43	0.00							
628.pop2_s	1	<u>2180</u>	<u>5.45</u>	2184	5.44	2180	5.45							
638.imagick_s	1	4704	3.07	4717	3.06	<u>4715</u>	<u>3.06</u>							
644.nab_s	1	2310	7.56	<u>2310</u>	<u>7.56</u>	2311	7.56							
649.fotonik3d_s	1	1195	7.63	1200	7.60	<u>1197</u>	<u>7.62</u>							
654.roms_s	1	<u>2751</u>	<u>5.72</u>	2749	5.73	2751	5.72							

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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"

## General Notes

Environment variables set by runcpu before the start of the run:

KMP\_AFFINITY = "granularity=fine,compact"

LD\_LIBRARY\_PATH = "/home/rlsahita/spec2017/lib/ia32:/home/rlsahita/spec2017/lib/intel64"

OMP\_STACKSIZE = "192M"

Binaries compiled on a system with Intel(R) Core(TM) i9-7900X CPU + 32GB RAM

memory using Redhat Enterprise Linux 7.5

Transparent Huge Pages enabled by default

## Platform Notes

Sysinfo program /home/rlsahita/spec2017/bin/sysinfo

Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f

running on tigerlake1-ravi Tue Apr 14 12:27:51 2020

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 : Genuine Intel(R) CPU 0000 @ 2.30GHz

1 "physical id"s (chips)

8 "processors"

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## Platform Notes (Continued)

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  : 8
physical 0: cores 0 1 2 3
```

From lscpu:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:             Little Endian
Address sizes:          39 bits physical, 48 bits virtual
CPU(s):                 8
On-line CPU(s) list:   0-7
Thread(s) per core:     2
Core(s) per socket:     4
Socket(s):              1
NUMA node(s):          1
Vendor ID:              GenuineIntel
CPU family:             6
Model:                  140
Model name:             Genuine Intel(R) CPU 0000 @ 2.30GHz
Stepping:               0
CPU MHz:                2227.572
CPU max MHz:            4200.0000
CPU min MHz:            400.0000
BogoMIPS:               4608.00
Virtualization:         VT-x
L1d cache:              192 KiB
L1i cache:              128 KiB
L2 cache:               5 MiB
L3 cache:               12 MiB
NUMA node0 CPU(s):     0-7
Vulnerability Itlb multihit: KVM: Mitigation: Split huge pages
Vulnerability L1tf:     Not affected
Vulnerability Mds:      Vulnerable: Clear CPU buffers attempted, no
microcode; SMT vulnerable
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via
pttl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user
pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB
filling
Vulnerability Tsx async abort: Not affected
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
```

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## Platform Notes (Continued)

nonstop\_tsc cpuid aperfmperf 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 ssbd ibrs ibpb stibp ibrs\_enhanced tpr\_shadow vnmi flexpriority  
ept vpid ept\_ad fsgsbase tsc\_adjust bmi1 avx2 smep bmi2 erms invpcid avx512f  
avx512dq rdseed adx smap avx512ifma clflushopt clwb intel\_pt avx512cd sha\_ni  
avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves dtherm ida arat pln pts hwp  
hwp\_notify hwp\_act\_window hwp\_epp hwp\_pkg\_req avx512vbmi umip pku ospke avx512\_vbmi2  
shstk gfni vaes vpclmulqdq avx512\_vnni avx512\_bitalg tme avx512\_vpopcntdq rdpid  
movdiri movdir64b avx512\_vp2intersect ibt flush\_lld arch\_capabilities

/proc/cpuinfo cache data  
cache size : 12288 KB

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

From /proc/meminfo

MemTotal: 16180852 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

From /etc/\*release\* /etc/\*version\*

fedora-release: Fedora release 31 (Thirty One)

os-release:

NAME=Fedora  
VERSION="31 (Workstation Edition)"  
ID=fedora  
VERSION\_ID=31  
VERSION\_CODENAME=""  
PLATFORM\_ID="platform:f31"  
PRETTY\_NAME="Fedora 31 (Workstation Edition)"  
ANSI\_COLOR="0;34"

redhat-release: Fedora release 31 (Thirty One)

system-release: Fedora release 31 (Thirty One)

system-release-cpe: cpe:/o:fedoraproject:fedora:31

uname -a:

Linux tigerlakel-ravi 5.5.0-cet+ #2 SMP Tue Feb 4 10:34:12 PST 2020 x86\_64 x86\_64  
x86\_64 GNU/Linux

run-level 3 Mar 10 17:08

SPEC is set to: /home/rlsahita/spec2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/fedora_localhost--live-home	ext4	391G	56G	315G	16%	/home

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## Platform Notes (Continued)

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.

(End of data from sysinfo program)

## Compiler Version Notes

=====

FC 603.bwaves\_s(base) 649.fotonik3d\_s(base) 654.foms\_s(base)

-----

GNU Fortran (GCC) 9.2.1 20200123 (Red Hat 9.2.1-3)

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=====

CC 621.wrf\_s(base) 627.cam4\_s(base) 628.pop2\_s(base)

-----

GNU Fortran (GCC) 9.2.1 20200123 (Red Hat 9.2.1-3)

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FC 607.cactubssn\_s(base)

-----

g++ (GCC) 9.2.1 20200123 (Red Hat 9.2.1-3)

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## Compiler Version Notes (Continued)

```
=====
CC 619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)
=====
```

```
gcc (GCC) 9.2.1 20200123 (Red Hat 9.2.1-3)
Copyright (C) 2019 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
=====
```

## Base Unknown Flags

```
603.bwaves_s: "-I/include -I/usr/includeARRAY(0x8b378f0)
-I/include -I/usr/includeARRAY(0x8b28df8)

607.cactuBSSN_s: "-I/include -I/usr/includeARRAY(0x8b3bab0)
-I/include -I/usr/includeARRAY(0x8b59508)
-I/include -I/usr/includeARRAY(0x8b67428)
-I/include -I/usr/includeARRAY(0x8c6c7a8)

619.lbm_s: "-I/include -I/usr/includeARRAY(0x8b56450)
-I/include -I/usr/includeARRAY(0x8b3bd08)

621.wrf_s: "-I/include -I/usr/includeARRAY(0x8b4ed00)
-I/include -I/usr/includeARRAY(0x8b6a0c0)
-I/include -I/usr/includeARRAY(0x8bd9b30)

627.cam4_s: "-I/include -I/usr/includeARRAY(0x8b56288)
-I/include -I/usr/includeARRAY(0x8c6e310)
-I/include -I/usr/includeARRAY(0x8c6d3e8)

628.pop2_s: "-I/include -I/usr/includeARRAY(0x8c6e358)
-I/include -I/usr/includeARRAY(0x8c6b4a8)
-I/include -I/usr/includeARRAY(0x8cb6298)

638.imagick_s: "-I/include -I/usr/includeARRAY(0x8b67ad0)
-I/include -I/usr/includeARRAY(0x8cb49a8)

644.nab_s: "-I/include -I/usr/includeARRAY(0x8c6d370)
-I/include -I/usr/includeARRAY(0x8cb5740)

649.fotonik3d_s: "-I/include -I/usr/includeARRAY(0x8b4bf60)
-I/include -I/usr/includeARRAY(0x8cbcff0)
```

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## Base Unknown Flags (Continued)

654.roms\_s: "-I/include -I/usr/includeARRAY(0x8cbd4a0)  
"-I/include -I/usr/includeARRAY(0x8cbf8f0)

## Base Compiler Invocation

C benchmarks:

gcc

Fortran benchmarks:

gfortran

Benchmarks using both Fortran and C:

gfortran gcc

Benchmarks using Fortran, C, and C++:

g++ gcc gfortran

## Base Portability Flags

603.bwaves\_s: -DSPEC\_LP64  
607.cactuBSSN\_s: -DSPEC\_LP64  
619.lbm\_s: -DSPEC\_LP64  
621.wrf\_s: -DSPEC\_CASE\_FLAG -fconvert=big-endian -DSPEC\_LP64  
627.cam4\_s: -DSPEC\_CASE\_FLAG -DSPEC\_LP64  
628.pop2\_s: -DSPEC\_CASE\_FLAG -fconvert=big-endian -DSPEC\_LP64  
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:

-m64 -std=c99 -O2 -fno-strict-aliasing -fopenmp -DSPEC\_OPENMP

Fortran benchmarks:

-m64 -DSPEC\_OPENMP -O2 -fno-strict-aliasing -fopenmp

Benchmarks using both Fortran and C:

-m64 -std=c99 -O2 -fno-strict-aliasing -fopenmp -DSPEC\_OPENMP

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## Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:

-m64 -std=c++03 -std=c99 -O2 -fno-strict-aliasing -fopenmp  
-DSPEC\_OPENMP

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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 2020-04-14 12:27:51-0700.

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