

# SPEC® CPU2017 Floating Point Speed Result

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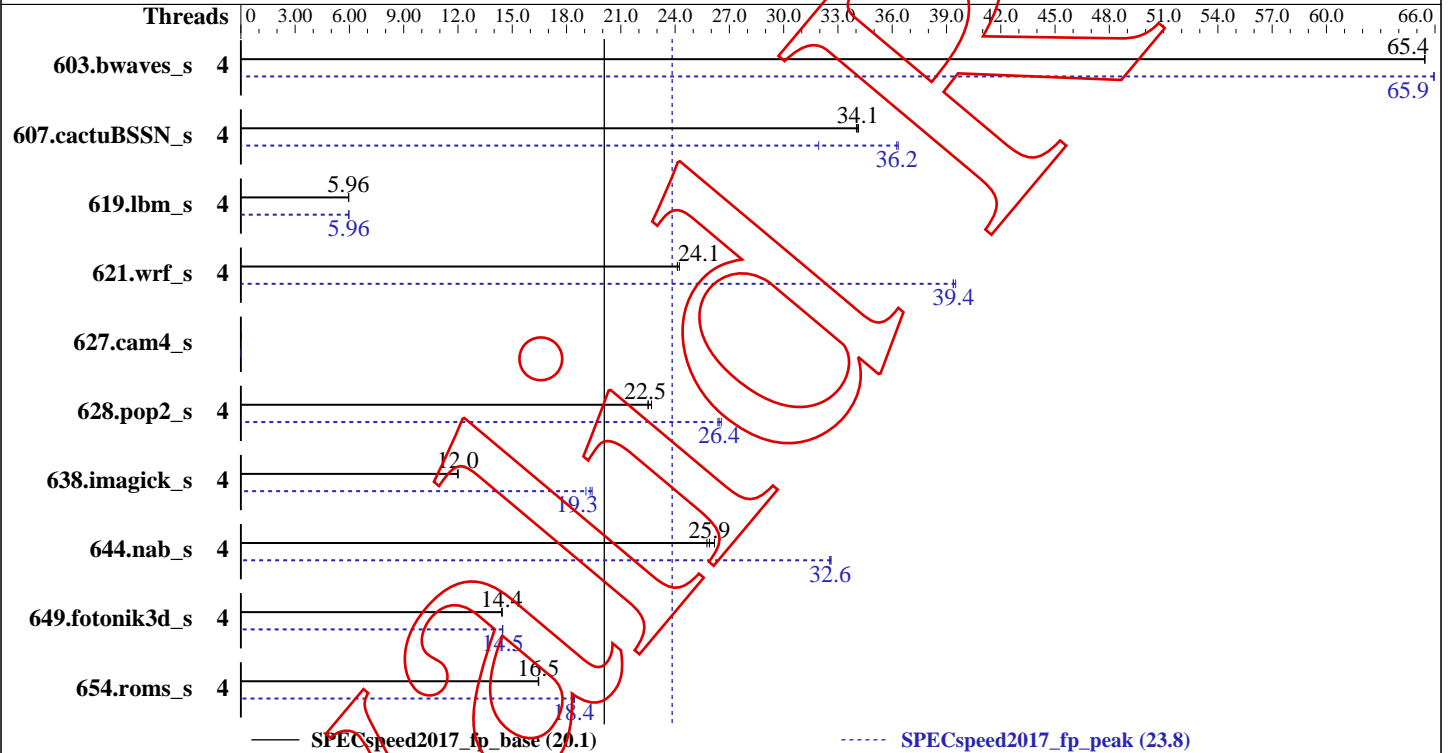
(Test Sponsor: Red Hat, Inc.)

SPECspeed2017\_fp\_base = 20.1

SPECspeed2017\_fp\_peak = 23.8

**CPU2017 License:** 0002991  
**Test Sponsor:** Red Hat, Inc.  
**Tested by:** Vladimir Makarov

**Test Date:** Jun-2024  
**Hardware Availability:** Now  
**Software Availability:**



## Hardware

CPU Name: AMD Ryzen 7 3800X 8-Core Processor  
Max MHz.:  
Nominal: 3319.645  
Enabled: 16 cores, 1 chip, threads/core  
Orderable:  
Cache L1:  
L2: 512 KB  
L3:  
Other:  
Memory: 32889052 KB  
'N GB (M x N GB nRxn PCn-nnnnnR-n, ECC)'  
Storage: 372 GB add more disk info here  
Other:

## Software

OS: Linux 5.5.11-200.fc31.x86\_64  
5.5.11-200.fc31.x86\_64  
Compiler: gcc version 15.0.0 20240619 (experimental) (GCC)  
Parallel: Yes  
Firmware:  
File System: ext4  
System State: multiuser  
Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other:

## Errors

'reportable' flag not set during run  
627.cam4\_s (base) did not have enough runs!  
627.cam4\_s (base) had invalid runs!  
627.cam4\_s (peak) did not have enough runs!  
627.cam4\_s (peak) had invalid runs!

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## Errors (Continued)

Run of 627.cam4\_s (base) was not valid; status is CE

Run of 627.cam4\_s (peak) was not valid; status is CE

Unknown flags were used! See

<https://www.spec.org/cpu2017/Docs/runcpu.html#flagsurl>  
for information about how to get rid of this error.

## Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	4	<b>902</b>	<b>65.4</b>	902	65.4	901	65.4	4	<b>895</b>	<b>65.9</b>	895	66.0	895	65.9
607.cactuBSSN_s	4	490	34.0	488	34.1	<b>489</b>	<b>34.1</b>	4	<b>460</b>	<b>36.2</b>	459	36.3	522	31.9
619.lbm_s	4	<b>880</b>	<b>5.96</b>	880	5.95	879	5.96	4	<b>878</b>	<b>5.96</b>	878	5.96	878	5.96
621.wrf_s	4	<b>548</b>	<b>24.1</b>	546	24.2	548	24.1	4	336	39.4	335	39.5	<b>336</b>	<b>39.4</b>
627.cam4_s	1	0.00	0.00					1	0.00	0.00				
628.pop2_s	4	528	22.5	523	22.7	<b>527</b>	<b>22.5</b>	4	450	26.4	<b>449</b>	<b>26.4</b>	447	26.6
638.imagick_s	4	1202	12.0	<b>1203</b>	<b>12.0</b>	1204	12.0	4	<b>747</b>	<b>19.3</b>	743	19.4	756	19.1
644.nab_s	4	667	26.2	<b>675</b>	<b>25.9</b>	678	25.8	4	536	32.6	537	32.5	<b>536</b>	<b>32.6</b>
649.fotonik3d_s	4	632	14.4	631	14.4	<b>632</b>	<b>14.4</b>	4	630	14.5	630	14.5	<b>630</b>	<b>14.5</b>
654.roms_s	4	957	16.5	958	16.4	<b>957</b>	<b>16.5</b>	4	<b>855</b>	<b>18.4</b>	854	18.4	857	18.4

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

## General Notes

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

```
LD_LIBRARY_PATH = */notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/lib64:/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/lib:/usr/lib64:/usr/lib:/lib64*  
OMP_STACKSIZE = "120M"
```

## Platform Notes

Sysinfo program /notnfs/vmakarov/spec2017/bin/sysinfo  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f  
running on to-ryzen.usersys.redhat.com Wed Jun 19 22:49:00 2024

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 : AMD Ryzen 7 3800X 8-Core Processor  
1 "physical id"s (chips)

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## Platform Notes (Continued)

16 "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 : 8
siblings  : 16
physical 0: cores 0 1 2 3 4 5 6 7
```

From lscpu:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:             Little Endian
Address sizes:          43 bits physical, 48 bits virtual
CPU(s):                 16
On-line CPU(s) list:   0-15
Thread(s) per core:    2
Core(s) per socket:    8
Socket(s):              1
NUMA node(s):          1
Vendor ID:              AuthenticAMD
CPU family:             23
Model:                  113
Model name:             AMD Ryzen 7 3800X 8-Core Processor
Stepping:               0
Frequency boost:        enabled
CPU MHz:                2700.207
CPU max MHz:           3900.0000
CPU min MHz:           2200.0000
BogoMIPS:              7785.39
Virtualization:        AMD-V
L1d cache:             256 KiB
L1i cache:             256 KiB
L2 cache:              4 MiB
L3 cache:              32 MiB
NUMA node0 CPU(s):     0-15
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:    Not affected
Vulnerability Mds:     Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Full AMD retpoline, IBPB conditional, STIBP always-on, 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 mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt
```

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## Platform Notes (Continued)

```
pdpe1gb rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid
aperfperf pni pclmulqdq monitor ssse3 fma cx16 sse4_1 sse4_2 movbe popcnt aes xsave
avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse
3dnowprefetch osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpeext
perfctr_llc mwaitx cpb cat_l3 cdp_l3 hw_pstate sme ssbd mba sev ibpb stibp vmmcall
fsgsbase bmi1 avx2 smep bmi2 cqm rdt_a rdseed adx smap clflushopt clwb sha_ni
xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
clzero irperf xsaveerptr rdpru wbnoinvd arat npt lbrv svm_lock nrip_save tsc_scale
vmcb_clean flushbyasid decodeassists pausefilter pfthreshold avic v_vmsave_vmload
vgif umip rdpid overflow_redov succor smca
```

```
/proc/cpuinfo cache data
cache size : 512 KB
```

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

```
From /proc/meminfo
```

```
MemTotal: 32889052 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 to-ryzen.usersys.redhat.com 5.5.11-200.fc31.x86_64 #1 SMP Mon Mar 23 17:32:43
UTC 2020 x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 2024-06-02 10:19
```

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

```
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/fedora_localhost--live-home ext4 372G 99G 255G 28% /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 607.cactuBSSN_s(base, peak)
```

-----

Using built-in specs.

```
COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/g++
```

```
COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/.../libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper
```

```
Target: x86_64-pc-linux-gnu
```

Configured with:

```
/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure  
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen  
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src  
--disable-bootstrap --disable-libcilkrts --enable-checking=release  
--enable-languages=c,c++,fortran
```

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 15.0.0 20240619 (experimental) (GCC)

Using built-in specs.

```
COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/gcc
```

```
COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/.../libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper
```

```
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--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src  
--disable-bootstrap --disable-libcilkrts --enable-checking=release  
--enable-languages=c,c++,fortran
```

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 15.0.0 20240619 (experimental) (GCC)

Using built-in specs.

```
COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/gfortran
```

```
COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/.../libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper
```

```
Target: x86_64-pc-linux-gnu
```

Configured with:

```
/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure  
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen  
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
```

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## Compiler Version Notes (Continued)

```
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 15.0.0 20240619 (experimental) (GCC)
-----
CC 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base, peak)
-----
Using built-in specs.
COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/gcc
COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/./libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper
Target: x86_64-pc-linux-gnu
Configured with:
 /notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 15.0.0 20240619 (experimental) (GCC)
-----
FC 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(base,
  peak)
-----
Using built-in specs.
COLLECT_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/gfortran
COLLECT_LTO_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen/bin/./libexec/gcc/x86_64-pc-linux-gnu/15.0.0/lto-wrapper
Target: x86_64-pc-linux-gnu
Configured with:
 /notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 15.0.0 20240619 (experimental) (GCC)
-----
CC 621.wrf_s(base, peak) 628.pop2_s(base, peak)
-----
```

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## Compiler Version Notes (Continued)

Using built-in specs.

COLLECT\_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/bin/gfortran

COLLECT\_LTO\_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/bin/./libexec/gcc/x86\_64-pc-linux-gnu/15.0.0/lto-wrapper

Target: x86\_64-pc-linux-gnu

Configured with:

```
/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
```

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 15.0.0 20240619 (experimental) (GCC)

Using built-in specs.

COLLECT\_GCC=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/bin/gcc

COLLECT\_LTO\_WRAPPER=/home/vmakarov/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/bin/./libexec/gcc/x86\_64-pc-linux-gnu/15.0.0/lto-wrapper

Target: x86\_64-pc-linux-gnu

Configured with:

```
/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src/configure
--prefix=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/inst.to-ryzen
--srcdir=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86_64/src
--disable-bootstrap --disable-libcilkrts --enable-checking=release
--enable-languages=c,c++,fortran
```

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 15.0.0 20240619 (experimental) (GCC)

## Base Unknown Flags

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa52fdd8)

"-fallow-argument-mismatchARRAY(0xa58a400)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa58a430)

"-fcommonARRAY(0xa533b90)

"-fallow-argument-mismatchARRAY(0xa59f800)

"-fcommon -std=c++14ARRAY(0xa5a6768)

619.lbm\_s: "-fcommonARRAY(0xa563570) "-fcommonARRAY(0xa569900)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa54ab68)

"-fcommonARRAY(0xa59f7e8)

"-fallow-argument-mismatchARRAY(0xa6cd1a8)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0x99a7e38)

"-fcommonARRAY(0xa5b5ba8)

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## Base Unknown Flags (Continued)

628.pop2\_s (continued):

"-fallow-argument-mismatchARRAY(0xa6cdaa8)

638.imagick\_s: "-fcommonARRAY(0xa5a6588) "-fcommonARRAY(0xa6cdcd0)

644.nab\_s: "-fcommonARRAY(0xa5a66f0) "-fcommonARRAY(0xa6cf288)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa5a6510)

"-fallow-argument-mismatchARRAY(0xa6cf7f8)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa5b2c68)

"-fallow-argument-mismatchARRAY(0xa631d10)

## Peak Unknown Flags

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa52fdd8)

"-fallow-argument-mismatchARRAY(0xa58a400)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa58a430)

"-fcommonARRAY(0xa593b90)

"-fallow-argument-mismatchARRAY(0xa59f800)

"-fcommon -std=c++14ARRAY(0xa5a6768)

619.lbm\_s: "-fcommonARRAY(0xa563570) "-fcommonARRAY(0xa569900)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa54ab68)

"-fcommonARRAY(0xa59f7e8)

"-fallow-argument-mismatchARRAY(0xa6cd1a8)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0x99a7e38)

"-fcommonARRAY(0xa5b5ba8)

"-fallow-argument-mismatchARRAY(0xa6cdaa8)

638.imagick\_s: "-fcommonARRAY(0xa5a6588) "-fcommonARRAY(0xa6cdcd0)

644.nab\_s: "-fcommonARRAY(0xa5a66f0) "-fcommonARRAY(0xa6cf288)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa5a6510)

"-fallow-argument-mismatchARRAY(0xa6cf7f8)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa5b2c68)

"-fallow-argument-mismatchARRAY(0xa631d10)

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## Peak Unknown Flags (Continued)

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa6cbd30)

"-fallow-argument-mismatchARRAY(0xa6320e0)

"-fltoARRAY(0xa7120d8)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa6322d8)

"-fcommonARRAY(0xa748d08)

"-fallow-argument-mismatchARRAY(0xa6fcc60)

"-fcommon -std=c++14ARRAY(0xa73ac58)

"-fltoARRAY(0xa743558)

619.lbm\_s: "-fcommonARRAY(0xa72fa88) "-fcommonARRAY(0xa748d38)

"-fltoARRAY(0xa718378)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa748ea0)

"-fcommonARRAY(0xa7436d8)

"-fallow-argument-mismatchARRAY(0xa7436c0)

"-fltoARRAY(0xa748780)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0xa738068)

"-fcommonARRAY(0xa6cbf68)

"-fallow-argument-mismatchARRAY(0xa748828)

"-fltoARRAY(0xa750c78)

638.imagick\_s: "-fcommonARRAY(0xa742a78) "-fcommonARRAY(0xa718750)

"-fltoARRAY(0xa751158)

644.nab\_s: "-fcommonARRAY(0xa6cd898) "-fcommonARRAY(0xa7437e0)

"-fltoARRAY(0xa7520e0)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa748cf0)

"-fallow-argument-mismatchARRAY(0xa748900)

"-fltoARRAY(0xa752c18)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa7435a0)

"-fallow-argument-mismatchARRAY(0xa7513c8)

"-fltoARRAY(0xa753728)

## Base Compiler Invocation

C benchmarks:

gcc

Fortran benchmarks:

gfortran

(Continued on next page)

# SPEC CPU2017 Floating Point Speed Result

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SPECspeed2017\_fp\_base = 20.1

SPECspeed2017\_fp\_peak = 23.8

**CPU2017 License:** 0002991  
**Test Sponsor:** Red Hat, Inc.  
**Tested by:** Vladimir Makarov

**Test Date:** Jun-2024  
**Hardware Availability:** Now  
**Software Availability:**

## Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C (except as noted below):

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  
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:

-O2 -mtune=generic -fopenmp -DSPEC\_OPENMP

Fortran benchmarks:

-O2 -mtune=generic -DSPEC\_OPENMP -fopenmp

Benchmarks using both Fortran and C:

621.wrf\_s: -O2 -mtune=generic -DSPEC\_OPENMP -fopenmp

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

Benchmarks using Fortran, C, and C++:

-O2 -mtune=generic -fopenmp -DSPEC\_OPENMP

# SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

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SPECspeed2017\_fp\_base = 20.1

SPECspeed2017\_fp\_peak = 23.8

**CPU2017 License:** 0002991

**Test Sponsor:** Red Hat, Inc.

**Tested by:** Vladimir Makarov

**Test Date:** Jun-2024

**Hardware Availability:** Now

**Software Availability:**

## Peak Compiler Invocation

C benchmarks:

gcc

Fortran benchmarks:

gfortran

Benchmarks using both Fortran and C (except as noted below):

gfortran gcc

Benchmarks using Fortran, C, and C++:

g++ gcc gfortran

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

-Ofast -mtune=corei7 -march=core-avx2 -fopenmp -DSPEC\_OPENMP

Fortran benchmarks:

603.bwaves\_s: -Ofast -mtune=corei7 -march=core-avx2 -DSPEC\_OPENMP  
-fopenmp -fno-stack-arrays

649.fotonik3d\_s: -Ofast -mtune=corei7 -march=core-avx2 -DSPEC\_OPENMP  
-fopenmp

654.roms\_s: Same as 649.fotonik3d\_s

Benchmarks using both Fortran and C:

621.wrf\_s: -Ofast -mtune=corei7 -march=core-avx2 -DSPEC\_OPENMP  
-fopenmp

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

Benchmarks using Fortran, C, and C++:

-Ofast -mtune=corei7 -march=core-avx2 -fopenmp -DSPEC\_OPENMP

# SPEC CPU2017 Floating Point Speed Result

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SPECspeed2017\_fp\_base = 20.1

SPECspeed2017\_fp\_peak = 23.8

**CPU2017 License:** 0002991

**Test Sponsor:** Red Hat, Inc.

**Tested by:** Vladimir Makarov

**Test Date:** Jun-2024

**Hardware Availability:** Now

**Software Availability:**

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Tested with SPEC CPU2017 v1.0.1 on 2024-06-19 22:48:59-0400.

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