

# SPEC® CPU2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

(Test Sponsor: Red Hat, Inc.)

SPECspeed2017\_fp\_base = 19.8

SPECspeed2017\_fp\_peak = 23.4

CPU2017 License: 0002991

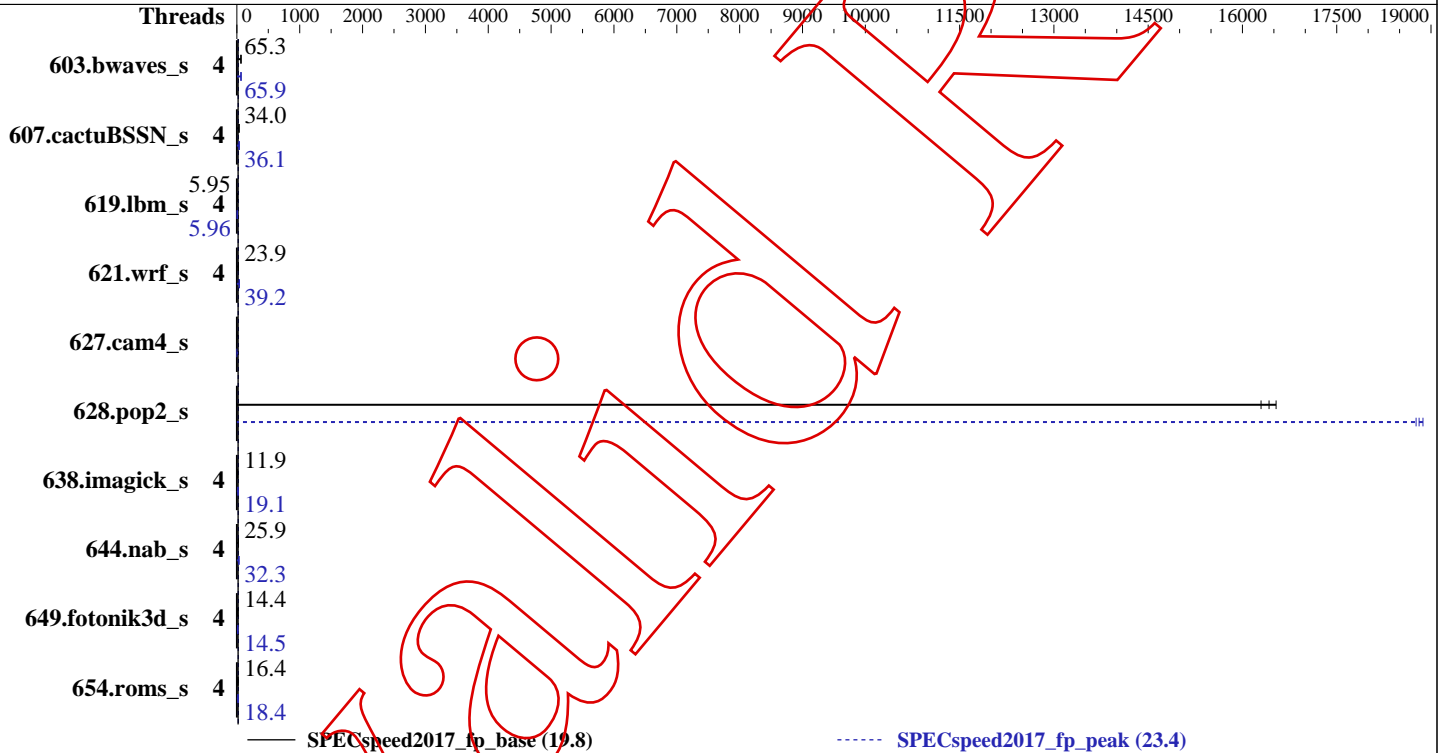
Test Sponsor: Red Hat, Inc.

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: 2333.418  
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 20240626 (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!  
628.pop2\_s (base) had invalid runs!  
627.cam4\_s (base) had invalid runs!  
627.cam4\_s (peak) did not have enough runs!

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## Errors (Continued)

628.pop2\_s (peak) had invalid runs!  
627.cam4\_s (peak) had invalid runs!  
Run of 627.cam4\_s (peak) was not valid; status is CE  
Run of 627.cam4\_s (base) was not valid; status is CE  
Run of 628.pop2\_s (peak) was not valid; status is VE  
Run of 628.pop2\_s (base) was not valid; status is VE  
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>904</b>	<b>65.3</b>	903	65.3	904	65.3	4	<b>896</b>	<b>65.9</b>	895	65.9	896	65.8
607.cactuBSSN_s	4	487	34.3	<b>490</b>	<b>34.0</b>	506	32.9	4	462	36.1	<b>462</b>	<b>36.1</b>	463	36.0
619.lbm_s	4	880	5.95	880	5.95	<b>880</b>	<b>5.95</b>	4	879	5.96	879	5.96	<b>879</b>	<b>5.96</b>
621.wrf_s	4	553	23.9	<b>553</b>	<b>23.9</b>	554	23.9	4	339	39.0	337	39.3	<b>337</b>	<b>39.2</b>
627.cam4_s	1	0.00	0.00					1	0.00	0.00				
628.pop2_s	4	0.729	0.00	0.718	0.00	0.723	0.00	4	0.631	0.00	0.633	0.00	0.629	0.00
638.imagick_s	4	<b>1208</b>	<b>11.9</b>	1210	11.9	1205	12.0	4	755	19.1	760	19.0	<b>756</b>	<b>19.1</b>
644.nab_s	4	672	26.0	676	25.8	<b>675</b>	<b>25.9</b>	4	542	32.2	<b>542</b>	<b>32.3</b>	541	32.3
649.fotonik3d_s	4	632	14.4	<b>632</b>	<b>14.4</b>	632	14.4	4	631	14.5	<b>631</b>	<b>14.5</b>	631	14.4
654.roms_s	4	962	16.4	958	16.4	<b>958</b>	<b>16.4</b>	4	853	18.5	<b>854</b>	<b>18.4</b>	856	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/abox/gcc/local.spec2017.x86_64/inst.to-ryzen/lib64:/notnfs/vmakarov/perf/abox/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 26 22:49:57 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>

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## Platform Notes (Continued)

From /proc/cpuinfo

model name : AMD Ryzen 7 3800X 8-Core Processor

1 "physical id"s (chips)

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: 2452.722

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,

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## Platform Notes (Continued)

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  
pdpe1gb rdtscp lm constant\_tsc rep\_good nopl nonstop\_tsc cpuid extd\_apicid  
aperfmpperf 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 bpext  
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\_recov 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
```

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## Platform Notes (Continued)

SPEC is set to: /notnfs/vmakarov/spec2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/fedora_localhost--live-home	ext4	372G	99G	254G	28%	/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.

(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 20240626 (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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--enable-languages=c,c++,fortran
```

Thread model: posix

Supported LTO compression algorithms: zlib  
gcc version 15.0.0 20240626 (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

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## Compiler Version Notes (Continued)

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 20240626 (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 20240626 (experimental) (GCC)

=====  
FC 603.lwaves\_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 20240626 (experimental) (GCC)

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## Compiler Version Notes (Continued)

=====  
CC 621.wrf\_s(base, peak) 628.pop2\_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 20240626 (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 20240626 (experimental) (GCC)

## Base Unknown Flags

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa5351b8)

"-fallow-argument-mismatchARRAY(0x99c12f0)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa585338)

"-fcommonARRAY(0xa5343e0)

"-fallow-argument-mismatchARRAY(0xa59e870)

"-fcommon -std=c++14ARRAY(0xa59ee08)

619.lbm\_s: "-fcommonARRAY(0xa55f838) "-fcommonARRAY(0xa5555b0)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa540608)

"-fcommonARRAY(0xa5881f0)

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## Base Unknown Flags (Continued)

621.wrf\_s (continued):

"-fallow-argument-mismatchARRAY(0xa6caf90)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0xa5303d0)

"-fcommonARRAY(0xa5b6bc8)

"-fallow-argument-mismatchARRAY(0xa6cb890)

638.imagick\_s: "-fcommonARRAY(0xa584af8) "-fcommonARRAY(0xa6cc8c0)

644.nab\_s: "-fcommonARRAY(0xa599d60) "-fcommonARRAY(0xa6cd070)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa584c90)

"-fallow-argument-mismatchARRAY(0xa6cd2f8)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa5b6c50)

"-fallow-argument-mismatchARRAY(0xa626c98)

## Peak Unknown Flags

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa5351b8)

"-fallow-argument-mismatchARRAY(0x99c12f0)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa585338)

"-fcommonARRAY(0xa5343e0)

"-fallow-argument-mismatchARRAY(0xa59e870)

"-fcommon -std=c++14ARRAY(0xa59ee08)

619.lbm\_s: "-fcommonARRAY(0xa55f838) "-fcommonARRAY(0xa5555b0)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa540608)

"-fcommonARRAY(0xa5881f0)

"-fallow-argument-mismatchARRAY(0xa6caf90)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0xa5303d0)

"-fcommonARRAY(0xa5b6bc8)

"-fallow-argument-mismatchARRAY(0xa6cb890)

638.imagick\_s: "-fcommonARRAY(0xa584af8) "-fcommonARRAY(0xa6cc8c0)

644.nab\_s: "-fcommonARRAY(0xa599d60) "-fcommonARRAY(0xa6cd070)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa584c90)

"-fallow-argument-mismatchARRAY(0xa6cd2f8)

(Continued on next page)



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## Peak Unknown Flags (Continued)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa5bbc50)  
"-fallow-argument-mismatchARRAY(0xa626c98)

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa6c9b40)  
"-fallow-argument-mismatchARRAY(0xa627068)  
"-fltoARRAY(0xa7280a0)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa627260)  
"-fcommonARRAY(0xa73ee10)  
"-fallow-argument-mismatchARRAY(0xa6e3e90)  
"-fcommon -std=c++14ARRAY(0xa742a80)  
"-fltoARRAY(0xa730948)

619.lbm\_s: "-fcommonARRAY(0xa727ce0) "-fcommonARRAY(0xa7423f0)  
"-fltoARRAY(0xa742af8)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa7448b0)  
"-fcommonARRAY(0xa73c6c8)  
"-fallow-argument-mismatchARRAY(0xa73c6b0)  
"-fltoARRAY(0xa723590)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0xa742618)  
"-fcommonARRAY(0xa6c9d50)  
"-fallow-argument-mismatchARRAY(0xa736e50)  
"-fltoARRAY(0xa74ac38)

638.imagick\_s: "-fcommonARRAY(0xa744d18) "-fcommonARRAY(0xa742b58)  
"-fltoARRAY(0xa74b118)

644.nab\_s: "-fcommonARRAY(0xa6cb680) "-fcommonARRAY(0xa727d40)  
"-fltoARRAY(0xa74f290)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa73ee70)  
"-fallow-argument-mismatchARRAY(0xa729bd8)  
"-fltoARRAY(0xa74fdc8)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa71f220)  
"-fallow-argument-mismatchARRAY(0xa74b388)  
"-fltoARRAY(0xa750900)

## Base Compiler Invocation

C benchmarks:  
gcc

(Continued on next page)

# SPEC CPU2017 Floating Point Speed Result

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SPECspeed2017\_fp\_base = 19.8

SPECspeed2017\_fp\_peak = 23.4

**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)

Fortran benchmarks:

gfortran

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 = 19.8

SPECspeed2017\_fp\_peak = 23.4

**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 = 19.8

SPECspeed2017\_fp\_peak = 23.4

**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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