

# SPEC® CPU2017 Floating Point Speed Result

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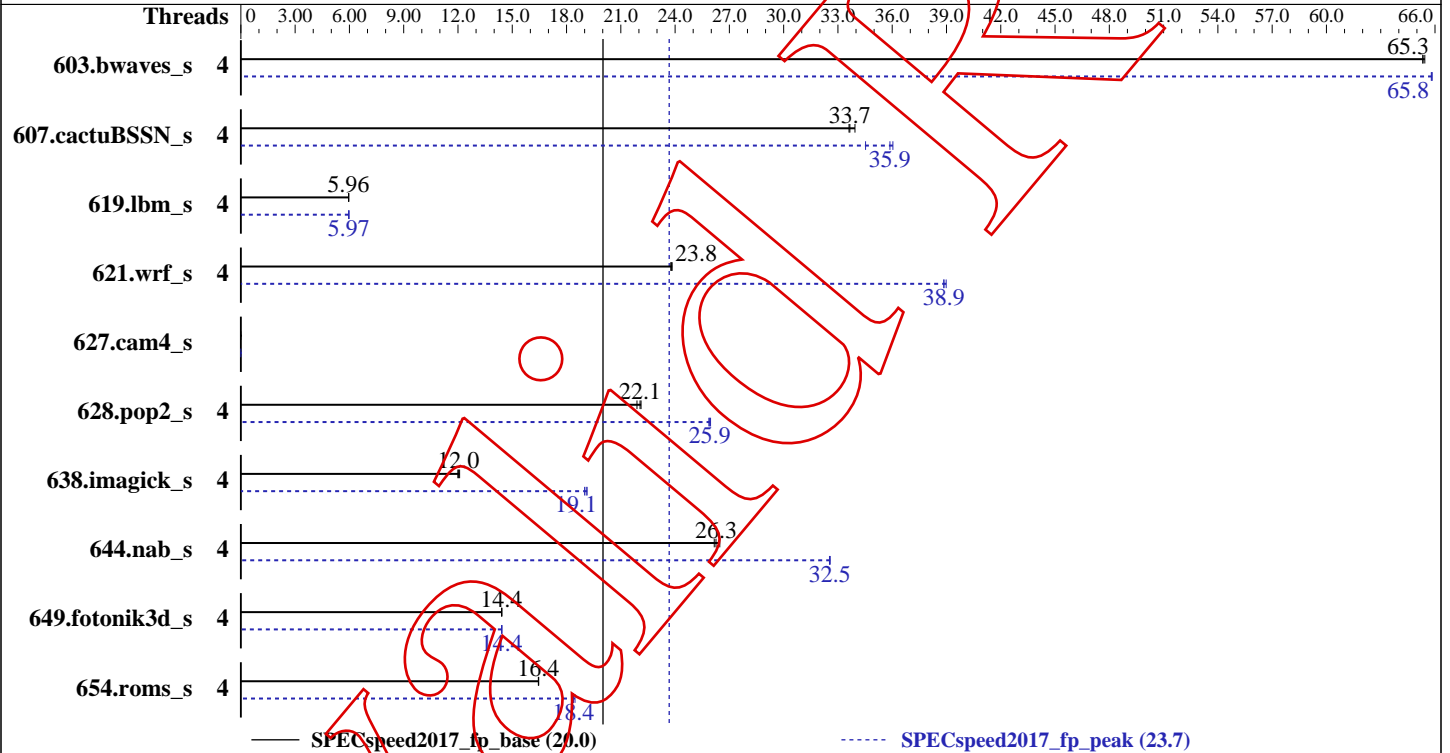
(Test Sponsor: Red Hat, Inc.)

SPECspeed2017\_fp\_base = 20.0

SPECspeed2017\_fp\_peak = 23.7

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

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



## Hardware

CPU Name: AMD Ryzen 7 3800X 8-Core Processor  
Max MHz.:  
Nominal: 1991.239  
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: 69 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 14.0.1 20240405 (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 (peak) was not valid; status is CE

Run of 627.cam4\_s (base) 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>903</b>	<b>65.3</b>	902	65.4	903	65.3	4	897	65.8	896	65.8	<b>896</b>	<b>65.8</b>
607.cactuBSSN_s	4	491	33.9	496	33.6	<b>495</b>	<b>33.7</b>	4	<b>465</b>	<b>35.9</b>	463	36.0	483	34.5
619.lbm_s	4	<b>879</b>	<b>5.96</b>	879	5.96	879	5.96	4	<b>878</b>	<b>5.97</b>	878	5.97	878	5.97
621.wrf_s	4	555	23.8	<b>556</b>	<b>23.8</b>	557	23.8	4	<b>340</b>	<b>38.9</b>	339	39.0	340	38.9
627.cam4_s	1	0.00	0.00					1	0.00	0.00				
628.pop2_s	4	537	22.1	542	21.9	<b>538</b>	<b>22.1</b>	4	459	25.9	<b>458</b>	<b>25.9</b>	457	26.0
638.imagick_s	4	1203	12.0	1193	12.1	<b>1199</b>	<b>12.0</b>	4	759	19.0	754	19.1	<b>756</b>	<b>19.1</b>
644.nab_s	4	668	26.2	<b>665</b>	<b>26.3</b>	660	26.5	4	537	32.5	<b>537</b>	<b>32.5</b>	536	32.6
649.fotonik3d_s	4	632	14.4	632	14.4	<b>632</b>	<b>14.4</b>	4	<b>632</b>	<b>14.4</b>	632	14.4	633	14.4
654.roms_s	4	<b>957</b>	<b>16.4</b>	956	16.5	958	16.4	4	857	18.4	853	18.5	<b>856</b>	<b>18.4</b>

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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 Sun Apr 7 22:48:56 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:               2585.337
CPU max MHz:           3900.0000
CPU min MHz:           2200.0000
BogoMIPS:              7785.73
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)

```
pdpelgb 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_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 2024-02-27 12:34
```

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

```
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/fedora_localhost--live-root ext4 69G 63G 2.6G 97% /
```

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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=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/libexec/gcc/x86\_64-pc-linux-gnu/14.0.1/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 14.0.1 20240405 (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=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/libexec/gcc/x86\_64-pc-linux-gnu/14.0.1/lto-wrapper

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Configured with:

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

Thread model: posix

Supported LTO compression algorithms: zlib

gcc version 14.0.1 20240405 (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=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/libexec/gcc/x86\_64-pc-linux-gnu/14.0.1/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 14.0.1 20240405 (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=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/libexec/gcc/x86\_64-pc-linux-gnu/14.0.1/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 14.0.1 20240405 (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=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/libexec/gcc/x86\_64-pc-linux-gnu/14.0.1/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 14.0.1 20240405 (experimental) (GCC)

```
=====  
CC 621.wrf_s(base, peak) 628.pop2_s(base, peak)  
=====
```

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Using built-in specs.

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

COLLECT\_LTO\_WRAPPER=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/libexec/gcc/x86\_64-pc-linux-gnu/14.0.1/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 14.0.1 20240405 (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=/notnfs/vmakarov/perf/sbox/gcc/local.spec2017.x86\_64/inst.to-ryzen/libexec/gcc/x86\_64-pc-linux-gnu/14.0.1/lto-wrapper

Target: x86\_64-pc-linux-gnu

Configured with:

```
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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 14.0.1 20240405 (experimental) (GCC)

## Base Unknown Flags

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa540340)

"-fallow-argument-mismatchARRAY(0xa542718)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa5774e0)

"-fcommonARRAY(0xa543c58)

"-fallow-argument-mismatchARRAY(0xa59d878)

"-fcommon -std=c++14ARRAY(0xa59dde8)

619.lbm\_s: "-fcommonARRAY(0xa556858) "-fcommonARRAY(0xa55c880)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa53ec18)

"-fcommonARRAY(0xa59d860)

"-fallow-argument-mismatchARRAY(0xa6c1d60)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0xa528848)

"-fcommonARRAY(0xa5ad048)

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## Base Unknown Flags (Continued)

628.pop2\_s (continued):

"-fallow-argument-mismatchARRAY(0xa6c2660)

638.imagick\_s: "-fcommonARRAY(0xa59db00) "-fcommonARRAY(0xa6c3690)

644.nab\_s: "-fcommonARRAY(0xa59dcf8) "-fcommonARRAY(0xa6c3e40)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa59db90)

"-fallow-argument-mismatchARRAY(0xa6c43b0)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa5af268)

"-fallow-argument-mismatchARRAY(0xa6277f8)

## Peak Unknown Flags

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa540340)

"-fallow-argument-mismatchARRAY(0xa542718)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa5774e0)

"-fcommonARRAY(0xa543c58)

"-fallow-argument-mismatchARRAY(0xa59d878)

"-fcommon -std=c++14ARRAY(0xa59dde8)

619.lbm\_s: "-fcommonARRAY(0xa556858) "-fcommonARRAY(0xa55c880)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa53ec18)

"-fcommonARRAY(0xa59d860)

"-fallow-argument-mismatchARRAY(0xa6c1d60)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0xa528848)

"-fcommonARRAY(0xa5ad048)

"-fallow-argument-mismatchARRAY(0xa6c2660)

638.imagick\_s: "-fcommonARRAY(0xa59db00) "-fcommonARRAY(0xa6c3690)

644.nab\_s: "-fcommonARRAY(0xa59dcf8) "-fcommonARRAY(0xa6c3e40)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa59db90)

"-fallow-argument-mismatchARRAY(0xa6c43b0)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa5af268)

"-fallow-argument-mismatchARRAY(0xa6277f8)

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## Peak Unknown Flags (Continued)

603.bwaves\_s: "-fallow-argument-mismatchARRAY(0xa6c0910)

"-fallow-argument-mismatchARRAY(0xa627bc8)

"-fltoARRAY(0xa73e720)

607.cactuBSSN\_s: "-fcommon -std=c++14ARRAY(0xa627dc0)

"-fcommonARRAY(0xa73e3f0)

"-fallow-argument-mismatchARRAY(0xa6f2528)

"-fcommon -std=c++14ARRAY(0xa72b858)

"-fltoARRAY(0xa73a4f0)

619.lbm\_s: "-fcommonARRAY(0xa723ac0) "-fcommonARRAY(0xa73e420)

"-fltoARRAY(0xa725238)

621.wrf\_s: "-fallow-argument-mismatchARRAY(0xa73e588)

"-fcommonARRAY(0xa73a670)

"-fallow-argument-mismatchARRAY(0xa73a658)

"-fltoARRAY(0xa73de68)

628.pop2\_s: "-fallow-argument-mismatchARRAY(0xa72bbe8)

"-fcommonARRAY(0xa6c0b20)

"-fallow-argument-mismatchARRAY(0xa73df10)

"-fltoARRAY(0xa7433d0)

638.imagick\_s: "-fcommonARRAY(0xa739a88) "-fcommonARRAY(0xa71f658)

"-fltoARRAY(0xa7438b0)

644.nab\_s: "-fcommonARRAY(0xa6c2450) "-fcommonARRAY(0xa73a778)

"-fltoARRAY(0xa744838)

649.fotonik3d\_s: "-fallow-argument-mismatchARRAY(0xa733ee8)

"-fallow-argument-mismatchARRAY(0xa73dfe8)

"-fltoARRAY(0xa745370)

654.roms\_s: "-fallow-argument-mismatchARRAY(0xa73a538)

"-fallow-argument-mismatchARRAY(0xa743b20)

"-fltoARRAY(0xa745e80)

## 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 = 20.0

SPECspeed2017\_fp\_peak = 23.7

**CPU2017 License:** 0002991

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

**Tested by:** Vladimir Makarov

**Test Date:** Apr-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 = 20.0

SPECspeed2017\_fp\_peak = 23.7

**CPU2017 License:** 0002991

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

**Tested by:** Vladimir Makarov

**Test Date:** Apr-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 = 20.0

SPECspeed2017\_fp\_peak = 23.7

**CPU2017 License:** 0002991

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

**Tested by:** Vladimir Makarov

**Test Date:** Apr-2024

**Hardware Availability:** Now

**Software Availability:**

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Tested with SPEC CPU2017 v1.0.1 on 2024-04-07 22:48:56-0400.

Report generated on 2024-04-08 09:25:36 by CPU2017 PDF formatter v5748.