SPEC CPU®2017 Floating Point Speed Result

not applicable

SPECspeed®2017_fp_base = 0.00

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: nnn (Your SPEC license number)
Test Sponsor: not applicable
Tested by: not applicable

Test Date: Oct-2020
Hardware Availability:
Software Availability:

Threads
603.bwaves_s
607.cactuBSSN_s
619.lbm_s
621.wrf_s
627.cam4_s
628.pop2_s
638.imagick_s
644.nab_s
649.fotonik3d_s
654.roms_s

Hardware

CPU Name: Intel Xeon Bronze 3106
Max MHz:
Nominal:
Enabled: cores, 1 chip, threads/core
Orderable:
Cache L1:
L2:
L3:
Other:
Memory: 78.334 GB fixme: If using DDR4, the format is: 'N GB (N x N GB nRxn PC4-nnnnX-X)'
Storage: 6.9 TB add more disk info here
Other:

Software

OS: Ubuntu 18.04.3 LTS 4.15.0-70-generic
Compiler: C/C++/Fortran: Version 10.1.0 of GCC, the GNU Compiler Collection
Parallel: Yes
Firmware:
File System: nfs
System State: Run level 5 (add definition here)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other:
Power Management: --

Errors

'reportable' flag not set during run
644.nab_s (base) did not have enough runs!
627.cam4_s (base) did not have enough runs!
638.imagick_s (base) did not have enough runs!
619.lbm_s (base) did not have enough runs!
607.cactuBSSN_s (base) did not have enough runs!
628.pop2_s (base) did not have enough runs!
649.fotonik3d_s (base) did not have enough runs!
621.wrf_s (base) did not have enough runs!
654.roms_s (base) did not have enough runs!
603.bwaves_s (base) did not have enough runs!

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SPEC CPU®2017 Floating Point Speed Result

not applicable

SPECspeed®2017_fp_base = 0.00

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Test Sponsor: not applicable
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Test Date: Oct-2020
Hardware Availability:
Software Availability:

Errors (Continued)

644.nab_s (base) had invalid runs!
627.cam4_s (base) had invalid runs!
638.imagick_s (base) had invalid runs!
607.cactuBSSN_s (base) had invalid runs!
628.pop2_s (base) had invalid runs!
649.fotonik3d_s (base) had invalid runs!
621.wrf_s (base) had invalid runs!
654.roms_s (base) had invalid runs!
603.bwaves_s (base) had invalid runs!
Input set must be 'refspeed' for a valid run (set to 'test' for this run)
Run of 603.bwaves_s (base) was not valid; status is RE
Run of 607.cactuBSSN_s (base) was not valid; status is RE
Run of 621.wrf_s (base) was not valid; status is CE
Run of 627.cam4_s (base) was not valid; status is RE
Run of 628.pop2_s (base) was not valid; status is RE
Run of 638.imagick_s (base) was not valid; status is RE
Run of 644.nab_s (base) was not valid; status is RE
Run of 649.fotonik3d_s (base) was not valid; status is RE
Run of 654.roms_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.

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	1	0.342	0.00											
607.cactuBSSN_s	1	0.316	0.00											
619.lbm_s	1	67.4	0.00											
621.wrf_s	1	0.00	0.00											
627.cam4_s	1	0.447	0.00											
628.pop2_s	1	0.482	0.00											
638.imagick_s	1	0.319	0.00											
644.nab_s	1	0.269	0.00											
649.fotonik3d_s	1	0.281	0.00											
654.roms_s	1	0.278	0.00											

SPECspeed®2017_fp_base = 0.00

SPECspeed®2017_fp_peak = Not Run

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

not applicable

SPECspeed®2017_fp_base = 0.00

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: nnn (Your SPEC license number)
Test Sponsor: not applicable
Tested by: not applicable

Test Date: Oct-2020
Hardware Availability:
Software Availability:

Submit Notes

```
The config file option 'submit' was used.
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
     "/u/home/schmidtf/riscv-float-toolchain/build/lib64/:/u/home/schmidtf/ri
     scv-float-toolchain/build/lib/:/lib64"
OMP_STACKSIZE = "120M"
```

Platform Notes

```
 Sysinfo program /u/home/schmidtf/spec/bin/sysinfo
 Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
 running on sksmall Wed Oct  7 14:23:50 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 : Intel(R) Xeon(R) Bronze 3106 CPU @ 1.70GHz
       1  "physical id"s (chips)
       8 "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  : 8
       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
      CPU(s):              8
      On-line CPU(s) list: 0-7
      Thread(s) per core:  1
      Core(s) per socket:  8
      Socket(s):           1
      NUMA node(s):        1
      Vendor ID:           GenuineIntel
      CPU family:          6
      Model:               85
      Model name:          Intel(R) Xeon(R) Bronze 3106 CPU @ 1.70GHz
```

(Continued on next page)

Platform Notes (Continued)

```
      Stepping:              4
      CPU MHz:               1668.056
      CPU max MHz:           1700.0000
      CPU min MHz:           800.0000
      BogoMIPS:              3400.00
      Virtualization:        VT-x
      L1d cache:             32K
      L1i cache:             32K
      L2 cache:              1024K
      L3 cache:              11264K
      NUMA node0 CPU(s):     0-7
      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
      aperfmperf 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 cdp_l3
      invpcid_single pti intel_ppin ssbd mba ibrs ibpb stibp tpr_shadow vnmi flexpriority
      ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a
      avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl
      xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
      dtherm arat pln pts hwp hwp_act_window hwp_pkg_req pku ospke md_clear flush_l1d

  /proc/cpuinfo cache data
     cache size : 11264 KB

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

  From /proc/meminfo
     MemTotal:       82139464 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Ubuntu 18.04.3 LTS

  From /etc/*release* /etc/*version*
     debian_version: buster/sid
     os-release:
        NAME="Ubuntu"
        VERSION="18.04.3 LTS (Bionic Beaver)"
        ID=ubuntu
        ID_LIKE=debian
        PRETTY_NAME="Ubuntu 18.04.3 LTS"
        VERSION_ID="18.04"
        HOME_URL="https://www.ubuntu.com/"
```


(Continued on next page)

Platform Notes (Continued)

```
      SUPPORT_URL="https://help.ubuntu.com/"

 uname -a:
    Linux sksmall 4.15.0-70-generic #79-Ubuntu SMP Tue Nov 12 10:36:11 UTC 2019 x86_64
    x86_64 x86_64 GNU/Linux

 Kernel self-reported vulnerability status:

 itlb_multihit:                          KVM: Mitigation: Split huge pages
 CVE-2018-3620 (L1 Terminal Fault):      Mitigation: PTE Inversion; VMX: conditional
                                         cache flushes, SMT disabled
 Microarchitectural Data Sampling:       Mitigation: Clear CPU buffers; SMT disabled
 CVE-2017-5754 (Meltdown):               Mitigation: PTI
 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: Full generic retpoline, IBPB:
                                         conditional, IBRS_FW, STIBP: disabled, RSB
                                         filling
 tsx_async_abort:                        Mitigation: Clear CPU buffers; SMT disabled

 run-level 5 Nov 28 09:46

 SPEC is set to: /u/home/schmidtf/spec
    Filesystem                                     Type  Size  Used Avail Use% Mounted
    on
    nasil10.informatik.tu-muenchen.de:/srv/il10/home nfs   6.9T  4.2T  2.5T  63% /u/home

 From /sys/devices/virtual/dmi/id
     BIOS:    HPE U32 11/13/2019
     Vendor:  HPE
     Product: ProLiant DL360 Gen10
     Product Family: ProLiant

 Cannot run dmidecode; consider saying (as root)
    chmod +s /usr/sbin/dmidecode

 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
C               | 619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)
------------------------------------------------------------------------------
Using built-in specs.
```


(Continued on next page)

Compiler Version Notes (Continued)

```
COLLECT_GCC=/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-gcc
COLLECT_LTO_WRAPPER=/u/home/schmidtf/riscv-float-toolchain/build/libexec/gcc/riscv64-unknown-linux-gnu/10.1.0/lto-wrapper
Target: riscv64-unknown-linux-gnu
Configured with: /u/home/schmidtf/riscv-float-toolchain/riscv-gcc/configure
  --target=riscv64-unknown-linux-gnu
  --prefix=/u/home/schmidtf/riscv-float-toolchain/build
  --with-sysroot=/u/home/schmidtf/riscv-float-toolchain/build/sysroot
  --with-system-zlib --enable-shared --enable-tls
  --enable-languages=c,c++,fortran --disable-libmudflap --disable-libssp
  --disable-libquadmath --disable-libsanitizer --disable-nls
  --disable-bootstrap --src=.././riscv-gcc --disable-multilib
  --with-abi=lp64d --with-arch=rv64imafd --with-tune=rocket
  'CFLAGS_FOR_TARGET=-O2   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=medlow'
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 10.1.0 (GCC)
------------------------------------------------------------------------------

==============================================================================
C++, C, Fortran | 607.cactuBSSN_s(base)
------------------------------------------------------------------------------
Using built-in specs.
COLLECT_GCC=/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-g++
COLLECT_LTO_WRAPPER=/u/home/schmidtf/riscv-float-toolchain/build/libexec/gcc/riscv64-unknown-linux-gnu/10.1.0/lto-wrapper
Target: riscv64-unknown-linux-gnu
Configured with: /u/home/schmidtf/riscv-float-toolchain/riscv-gcc/configure
  --target=riscv64-unknown-linux-gnu
  --prefix=/u/home/schmidtf/riscv-float-toolchain/build
  --with-sysroot=/u/home/schmidtf/riscv-float-toolchain/build/sysroot
  --with-system-zlib --enable-shared --enable-tls
  --enable-languages=c,c++,fortran --disable-libmudflap --disable-libssp
  --disable-libquadmath --disable-libsanitizer --disable-nls
  --disable-bootstrap --src=.././riscv-gcc --disable-multilib
  --with-abi=lp64d --with-arch=rv64imafd --with-tune=rocket
  'CFLAGS_FOR_TARGET=-O2   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=medlow'
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 10.1.0 (GCC)
Using built-in specs.
COLLECT_GCC=/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-gcc
COLLECT_LTO_WRAPPER=/u/home/schmidtf/riscv-float-toolchain/build/libexec/gcc/riscv64-unknown-linux-gnu/10.1.0/lto-wrapper
Target: riscv64-unknown-linux-gnu
Configured with: /u/home/schmidtf/riscv-float-toolchain/riscv-gcc/configure
  --target=riscv64-unknown-linux-gnu
  --prefix=/u/home/schmidtf/riscv-float-toolchain/build
```

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Compiler Version Notes (Continued)

```
  --with-sysroot=/u/home/schmidtf/riscv-float-toolchain/build/sysroot
  --with-system-zlib --enable-shared --enable-tls
  --enable-languages=c,c++,fortran --disable-libmudflap --disable-libssp
  --disable-libquadmath --disable-libsanitizer --disable-nls
  --disable-bootstrap --src=.././riscv-gcc --disable-multilib
  --with-abi=lp64d --with-arch=rv64imafd --with-tune=rocket
  'CFLAGS_FOR_TARGET=-O2   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=medlow'
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 10.1.0 (GCC)
Using built-in specs.
COLLECT_GCC=/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-gfortran
COLLECT_LTO_WRAPPER=/u/home/schmidtf/riscv-float-toolchain/build/libexec/gcc/riscv64-unknown-linux-gnu/10.1.0/lto-wrapper
Target: riscv64-unknown-linux-gnu
Configured with: /u/home/schmidtf/riscv-float-toolchain/riscv-gcc/configure
  --target=riscv64-unknown-linux-gnu
  --prefix=/u/home/schmidtf/riscv-float-toolchain/build
  --with-sysroot=/u/home/schmidtf/riscv-float-toolchain/build/sysroot
  --with-system-zlib --enable-shared --enable-tls
  --enable-languages=c,c++,fortran --disable-libmudflap --disable-libssp
  --disable-libquadmath --disable-libsanitizer --disable-nls
  --disable-bootstrap --src=.././riscv-gcc --disable-multilib
  --with-abi=lp64d --with-arch=rv64imafd --with-tune=rocket
  'CFLAGS_FOR_TARGET=-O2   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=medlow'
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 10.1.0 (GCC)
------------------------------------------------------------------------------

==============================================================================
Fortran          | 603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)
------------------------------------------------------------------------------
Using built-in specs.
COLLECT_GCC=/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-gfortran
COLLECT_LTO_WRAPPER=/u/home/schmidtf/riscv-float-toolchain/build/libexec/gcc/riscv64-unknown-linux-gnu/10.1.0/lto-wrapper
Target: riscv64-unknown-linux-gnu
Configured with: /u/home/schmidtf/riscv-float-toolchain/riscv-gcc/configure
  --target=riscv64-unknown-linux-gnu
  --prefix=/u/home/schmidtf/riscv-float-toolchain/build
  --with-sysroot=/u/home/schmidtf/riscv-float-toolchain/build/sysroot
  --with-system-zlib --enable-shared --enable-tls
  --enable-languages=c,c++,fortran --disable-libmudflap --disable-libssp
  --disable-libquadmath --disable-libsanitizer --disable-nls
  --disable-bootstrap --src=.././riscv-gcc --disable-multilib
  --with-abi=lp64d --with-arch=rv64imafd --with-tune=rocket
```

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Compiler Version Notes (Continued)

```
  'CFLAGS_FOR_TARGET=-O2   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=medlow'
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 10.1.0 (GCC)
------------------------------------------------------------------------------

==============================================================================
Fortran, C      | 627.cam4_s(base) 628.pop2_s(base)
------------------------------------------------------------------------------
Using built-in specs.
COLLECT_GCC=/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-gfortran
COLLECT_LTO_WRAPPER=/u/home/schmidtf/riscv-float-toolchain/build/libexec/gcc/riscv64-unknown-linux-gnu/10.1.0/lto-wrapper
Target: riscv64-unknown-linux-gnu
Configured with: /u/home/schmidtf/riscv-float-toolchain/riscv-gcc/configure
  --target=riscv64-unknown-linux-gnu
  --prefix=/u/home/schmidtf/riscv-float-toolchain/build
  --with-sysroot=/u/home/schmidtf/riscv-float-toolchain/build/sysroot
  --with-system-zlib --enable-shared --enable-tls
  --enable-languages=c,c++,fortran --disable-libmudflap --disable-libssp
  --disable-libquadmath --disable-libsanitizer --disable-nls
  --disable-bootstrap --src=.././riscv-gcc --disable-multilib
  --with-abi=lp64d --with-arch=rv64imafd --with-tune=rocket
  'CFLAGS_FOR_TARGET=-O2   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=medlow'
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 10.1.0 (GCC)
Using built-in specs.
COLLECT_GCC=/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-gcc
COLLECT_LTO_WRAPPER=/u/home/schmidtf/riscv-float-toolchain/build/libexec/gcc/riscv64-unknown-linux-gnu/10.1.0/lto-wrapper
Target: riscv64-unknown-linux-gnu
Configured with: /u/home/schmidtf/riscv-float-toolchain/riscv-gcc/configure
  --target=riscv64-unknown-linux-gnu
  --prefix=/u/home/schmidtf/riscv-float-toolchain/build
  --with-sysroot=/u/home/schmidtf/riscv-float-toolchain/build/sysroot
  --with-system-zlib --enable-shared --enable-tls
  --enable-languages=c,c++,fortran --disable-libmudflap --disable-libssp
  --disable-libquadmath --disable-libsanitizer --disable-nls
  --disable-bootstrap --src=.././riscv-gcc --disable-multilib
  --with-abi=lp64d --with-arch=rv64imafd --with-tune=rocket
  'CFLAGS_FOR_TARGET=-O2   -mcmodel=medlow' 'CXXFLAGS_FOR_TARGET=-O2
  -mcmodel=medlow'
Thread model: posix
Supported LTO compression algorithms: zlib
gcc version 10.1.0 (GCC)
------------------------------------------------------------------------------
```

Base Unknown Flags

603.bwaves_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in FC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

607.cactuBSSN_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in CXX)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in CC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in FC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

619.lbm_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in CC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

627.cam4_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in FC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in CC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

628.pop2_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in FC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in CC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

638.imagick_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in CC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

644.nab_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in CC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

649.fotonik3d_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in FC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

654.roms_s: "/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in FC)
"/u/home/schmidtf/riscv-float-toolchain/build/bin/riscv64-unknown-linux-gnu-" (in LD)

Base 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

CPU2017 License: nnn (Your SPEC license number)
Test Sponsor: not applicable
Tested by: not applicable

Test Date: Oct-2020
Hardware Availability:
Software Availability:

Base Portability Flags

603.bwaves_s: `-static(*) -DSPEC_LP64`
607.cactuBSSN_s: `-static(*) -DSPEC_LP64`
619.lbm_s: `-static(*) -DSPEC_LP64`
627.cam4_s: `-static(*) -DSPEC_CASE_FLAG -DSPEC_LP64`
628.pop2_s: `-static(*) -DSPEC_CASE_FLAG -fconvert=big-endian -DSPEC_LP64`
638.imagick_s: `-static(*) -DSPEC_LP64`
644.nab_s: `-static(*) -DSPEC_LP64`
649.fotonik3d_s: `-static(*) -DSPEC_LP64`
654.roms_s: `-static(*) -DSPEC_LP64`

(*) Indicates a portability flag that was found in a non-portability variable.

Base Optimization Flags

C benchmarks:
`-std=c99 -g -O3 -DSPEC_SUPPRESS_OPENMP -fno-unsafe-math-optimizations -fno-tree-loop-vectorize -fno-openmp`

Fortran benchmarks:
`-DSPEC_SUPPRESS_OPENMP -g -O3 -fno-unsafe-math-optimizations -fno-tree-loop-vectorize -fno-openmp`

Benchmarks using both Fortran and C:

627.cam4_s: `-std=c99 -DSPEC_SUPPRESS_OPENMP -g -O3 -fno-unsafe-math-optimizations -fno-tree-loop-vectorize -fno-openmp`

628.pop2_s: `Same as 627.cam4_s`

Benchmarks using Fortran, C, and C++:
`-std=c++03 -std=c99 -g -O3 -DSPEC_SUPPRESS_OPENMP -fno-unsafe-math-optimizations -fno-tree-loop-vectorize -fno-openmp`

Base Other Flags

C benchmarks:
`-fcommon -fallow-argument-mismatch`

Fortran benchmarks:
`-fcommon -fallow-argument-mismatch`

(Continued on next page)

Base Other Flags (Continued)

Benchmarks using both Fortran and C (except as noted below):
`-fcommon -fallow-argument-mismatch`

Benchmarks using Fortran, C, and C++:
`-fcommon -fallow-argument-mismatch`

Tested with SPEC CPU®2017 v1.1.0 on 2020-10-07 14:23:48+0000.
Report generated on 2020-10-07 14:57:40 by CPU2017 PDF formatter v6255.