SPEC® CPU2017 Floating Point Speed Result

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Dell Inc.

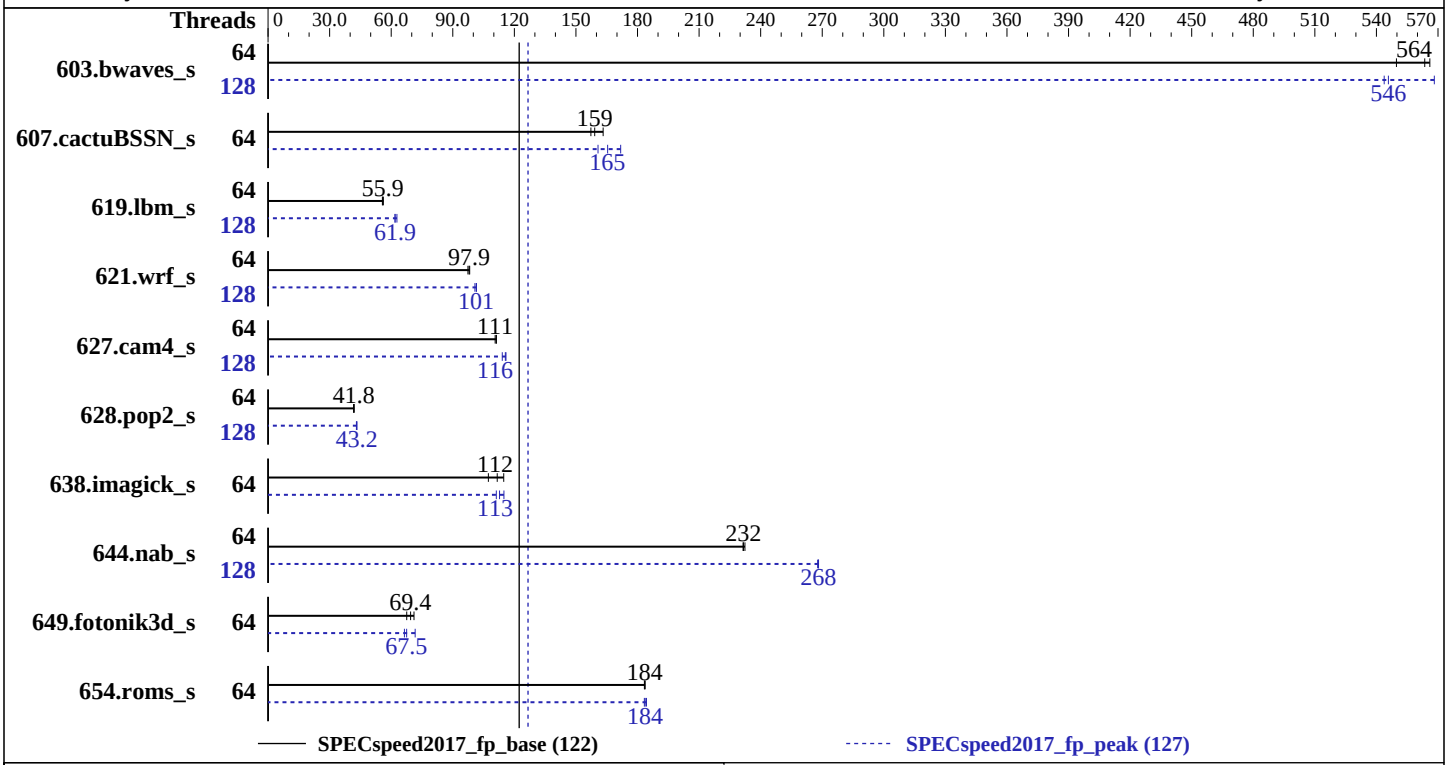
PowerEdge R7425 (AMD EPYC 7551, 2.00GHz)

SPECspeed2017_fp_base = 122

SPECspeed2017_fp_peak = 127

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Nov-2018
Hardware Availability: Dec-2018
Software Availability: Oct-2018



Hardware

CPU Name:	AMD EPYC 7551
Max MHz.:	3000
Nominal:	2000
Enabled:	64 cores, 2 chips, 2 threads/core
Orderable:	1,2 chips
Cache L1:	64 KB I + 32 KB D on chip per core
L2:	512 KB I+D on chip per core
L3:	64 MB I+D on chip per chip, 8 MB shared / 4 cores
Other:	None
Memory:	1 TB (16 x 64 GB 4DRx4 PC4-2667V-L)
Storage:	1 x 120 GB SATA SSD
Other:	None

Software

OS:	Ubuntu 18.04.1 LTS kernel 4.15.0-38
Compiler:	C/C++: Version 1.2.1 of AOCC Fortran: Version 4.8.2 of GCC
Parallel:	Yes
Firmware:	Version 1.6.7 released Oct-2018
File System:	ext4
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other:	jemalloc memory allocator library V4.5.0

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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	64	**105**	**564**	104	566	107	550	128	104	568	**108**	**546**	108	544
607.cactuBSSN_s	64	**105**	**159**	102	163	106	157	64	104	161	**101**	**165**	97.0	172
619.lbm_s	64	**93.7**	**55.9**	93.3	56.2	94.0	55.7	128	83.4	62.8	**84.6**	**61.9**	84.7	61.9
621.wrf_s	64	136	97.4	135	98.2	**135**	**97.9**	128	131	101	**130**	**101**	130	102
627.cam4_s	64	**79.7**	**111**	79.7	111	80.1	111	128	77.7	114	76.5	116	**76.7**	**116**
628.pop2_s	64	283	42.0	**284**	**41.8**	285	41.7	128	274	43.3	276	43.0	**275**	**43.2**
638.imagick_s	64	**129**	**112**	126	115	134	107	64	126	115	130	111	**128**	**113**
644.nab_s	64	**75.4**	**232**	75.2	232	75.5	231	128	65.1	268	**65.1**	**268**	65.3	268
649.fotonik3d_s	64	**131**	**69.4**	128	71.1	135	67.6	64	127	71.7	137	66.4	**135**	**67.5**
654.roms_s	64	85.9	183	**85.8**	**184**	85.7	184	64	85.9	183	85.4	184	**85.7**	**184**

SPECspeed2017_fp_base = **122**

SPECspeed2017_fp_peak = **127**

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

Compiler Notes

```
The AMD64 AOCC Compiler Suite is available at
http://developer.amd.com/amd-aocc/

The AOCC Gold Linker plugin was installed and used for the link stage.

The AOCC Fortran Plugin version 1.2 was used to leverage AOCC optimizers
with gfortran. It is available here:
http://developer.amd.com/amd-aocc/
```

Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Set dirty_ratio=8 to limit dirty cache to 8% of memory
Set swappiness=1 to swap only if necessary
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory
sync then drop_caches=3 to reset caches before invoking runcpu

dirty_ratio, swappiness, zone_reclaim_mode and drop_caches were
all set using privileged echo (e.g. echo 1 > /proc/sys/vm/swappiness).

Transparent huge pages were enabled for this run (OS default)
```

General Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0,8,16,24,32,40,48,56,2,10,18,26,34,42,50,58,4,12,20,28,36,44,52,60,6,14,22,30,
38,46,54,62,1,9,17,25,33,41,49,57,3,11,19,27,35,43,51,59,5,13,21,29,37,45,53,61,7,15,23,31,39,47,55,63"
LD_LIBRARY_PATH = "/home/cpu2017-1.0.5/amd1806-speed-libs-revA/64:/home/cpu2017-1.0.5/amd1806-speed-libs-revA/32:"
OMP_PROC_BIND = "true"
OMP_STACKSIZE = "192M"
OMP_WAIT_POLICY = "active"

Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using RHEL 7.4
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.

jemalloc: configured and built with GCC v4.8.5
in RHEL v7.2 under default conditions.
jemalloc: sources available from jemalloc.net or
https://github.com/jemalloc/jemalloc/releases
jemalloc uses environment variable MALLOC_CONF
with values narenas and lg_chunk:
narenas: sets the maximum number of arenas to use
for automatic multiplexing
of threads and arenas.
lg_chunk: set the virtual memory chunk size (log
base 2). For example,
lg_chunk:21 sets the default chunk size to 2^21 =
2MiB.
```

Platform Notes

```
BIOS settings:
Memory Interleaving set to Channel Interleaving
Virtualization Technology disabled
System Profile set to Custom
CPU Power Management set to Maximum Performance
Memory Frequency set to Maximum Performance
Turbo Boost enabled
C States set to Autonomous
Memory Patrol Scrub disabled
Memory Refresh Rate set to 1x
PCI ASPM L1 Link Power Management disabled
Determinism Slider set to Power Determinism
Sysinfo program /home/cpu2017-1.0.5/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
```

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Platform Notes (Continued)

```
running on user-PowerEdge-R7425 Fri Nov 23 15:55:27 2018

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 EPYC 7551 32-Core Processor
      2  "physical id"s (chips)
      128 "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 : 32
      siblings  : 64
      physical 0: cores 0 1 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
      29 30 31
      physical 1: cores 0 1 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
      29 30 31

From lscpu:
     Architecture:        x86_64
     CPU op-mode(s):      32-bit, 64-bit
     Byte Order:          Little Endian
     CPU(s):              128
     On-line CPU(s) list: 0-127
     Thread(s) per core:  2
     Core(s) per socket:  32
     Socket(s):           2
     NUMA node(s):        8
     Vendor ID:           AuthenticAMD
     CPU family:          23
     Model:               1
     Model name:          AMD EPYC 7551 32-Core Processor
     Stepping:            2
     CPU MHz:             2442.092
     BogoMIPS:            3992.30
     Virtualization:      AMD-V
     L1d cache:           32K
     L1i cache:           64K
     L2 cache:            512K
     L3 cache:            8192K
     NUMA node0 CPU(s):   0,8,16,24,32,40,48,56,64,72,80,88,96,104,112,120
     NUMA node1 CPU(s):   2,10,18,26,34,42,50,58,66,74,82,90,98,106,114,122
     NUMA node2 CPU(s):   4,12,20,28,36,44,52,60,68,76,84,92,100,108,116,124
     NUMA node3 CPU(s):   6,14,22,30,38,46,54,62,70,78,86,94,102,110,118,126
     NUMA node4 CPU(s):   1,9,17,25,33,41,49,57,65,73,81,89,97,105,113,121
     NUMA node5 CPU(s):   3,11,19,27,35,43,51,59,67,75,83,91,99,107,115,123
```

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Platform Notes (Continued)

```
      NUMA node6 CPU(s):    5,13,21,29,37,45,53,61,69,77,85,93,101,109,117,125
      NUMA node7 CPU(s):    7,15,23,31,39,47,55,63,71,79,87,95,103,111,119,127
      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 amd_dcm aperfmperf 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 skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb
      hw_pstate sme ssbd ibpb vmmcall fsgsbase bmi1 avx2 smep bmi2 rdseed adx smap
      clflushopt sha_ni xsaveopt xsavec xgetbv1 xsaves clzero irperf xsaveerptr arat npt
      lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
      pfthreshold avic v_vmsave_vmload vgif 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.
    available: 8 nodes (0-7)
    node 0 cpus: 0 8 16 24 32 40 48 56 64 72 80 88 96 104 112 120
    node 0 size: 128638 MB
    node 0 free: 128480 MB
    node 1 cpus: 2 10 18 26 34 42 50 58 66 74 82 90 98 106 114 122
    node 1 size: 128999 MB
    node 1 free: 128869 MB
    node 2 cpus: 4 12 20 28 36 44 52 60 68 76 84 92 100 108 116 124
    node 2 size: 129020 MB
    node 2 free: 128886 MB
    node 3 cpus: 6 14 22 30 38 46 54 62 70 78 86 94 102 110 118 126
    node 3 size: 129020 MB
    node 3 free: 128857 MB
    node 4 cpus: 1 9 17 25 33 41 49 57 65 73 81 89 97 105 113 121
    node 4 size: 129020 MB
    node 4 free: 128780 MB
    node 5 cpus: 3 11 19 27 35 43 51 59 67 75 83 91 99 107 115 123
    node 5 size: 129020 MB
    node 5 free: 128885 MB
    node 6 cpus: 5 13 21 29 37 45 53 61 69 77 85 93 101 109 117 125
    node 6 size: 129020 MB
    node 6 free: 128824 MB
    node 7 cpus: 7 15 23 31 39 47 55 63 71 79 87 95 103 111 119 127
    node 7 size: 129018 MB
    node 7 free: 128861 MB
    node distances:
    node   0   1   2   3   4   5   6   7
      0:  10  16  16  16  28  28  22  28
      1:  16  10  16  16  28  28  28  22
```

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Platform Notes (Continued)

```
     2:  16  16  10  16  22  28  28  28
     3:  16  16  16  10  28  22  28  28
     4:  28  28  22  28  10  16  16  16
     5:  28  28  28  22  16  10  16  16
     6:  22  28  28  28  16  16  10  16
     7:  28  22  28  28  16  16  16  10

  From /proc/meminfo
     MemTotal:       1056521116 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  /usr/bin/lsb_release -d
     Ubuntu 18.04.1 LTS

  From /etc/*release* /etc/*version*
     debian_version: buster/sid
     os-release:
        NAME="Ubuntu"
        VERSION="18.04.1 LTS (Bionic Beaver)"
        ID=ubuntu
        ID_LIKE=debian
        PRETTY_NAME="Ubuntu 18.04.1 LTS"
        VERSION_ID="18.04"
        HOME_URL="https://www.ubuntu.com/"
        SUPPORT_URL="https://help.ubuntu.com/"

  uname -a:
     Linux user-PowerEdge-R7425 4.15.0-39-generic #42-Ubuntu SMP Tue Oct 23 15:48:01 UTC
     2018 x86_64 x86_64 x86_64 GNU/Linux

  Kernel self-reported vulnerability status:

  CVE-2017-5754 (Meltdown):          Not affected
  CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
  CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline, IBPB

  run-level 3 Nov 23 09:10 last=5

  SPEC is set to: /home/cpu2017-1.0.5
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda2      ext4  109G   14G   90G  13% /

  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.
```

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Platform Notes (Continued)

```
   BIOS Dell Inc. 1.6.7 10/29/2018
   Memory:
    16x 80CE863280CE M386A8K40BM2-CTD 64 GB 4 rank 2666
    16x Not Specified Not Specified

 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
 CC  619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.1.2.1.B29.2018_05_14 clang version 6.0.0 (CLANG:
  b6b3d31d6df08fb7da935a28842b39b7b3c2c55b) (llvm/cpu/llvm
  18855c80ed252fc4ba4ac41e2086627ef2bddd04) (based on LLVM
  AOCC.LLVM.1.2.1.B29.2018_05_14)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aocc1.2.1/AOCC-1.2.1-Compiler/bin
------------------------------------------------------------------------------

==============================================================================
 FC  607.cactuBSSN_s(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.1.2.1.B29.2018_05_14 clang version 6.0.0 (CLANG:
  b6b3d31d6df08fb7da935a28842b39b7b3c2c55b) (llvm/cpu/llvm
  18855c80ed252fc4ba4ac41e2086627ef2bddd04) (based on LLVM
  AOCC.LLVM.1.2.1.B29.2018_05_14)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aocc1.2.1/AOCC-1.2.1-Compiler/bin
AOCC.LLVM.1.2.1.B29.2018_05_14 clang version 6.0.0 (CLANG:
  b6b3d31d6df08fb7da935a28842b39b7b3c2c55b) (llvm/cpu/llvm
  18855c80ed252fc4ba4ac41e2086627ef2bddd04) (based on LLVM
  AOCC.LLVM.1.2.1.B29.2018_05_14)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aocc1.2.1/AOCC-1.2.1-Compiler/bin
GNU Fortran (GCC) 4.8.2
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You may redistribute copies of GNU Fortran
under the terms of the GNU General Public License.
For more information about these matters, see the file named COPYING
------------------------------------------------------------------------------
```

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Compiler Version Notes (Continued)

```
==============================================================================
 FC  603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(base,
      peak)
------------------------------------------------------------------------------
GNU Fortran (GCC) 4.8.2
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You may redistribute copies of GNU Fortran
under the terms of the GNU General Public License.
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------------------------------------------------------------------------------

==============================================================================
 CC  621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)
------------------------------------------------------------------------------
GNU Fortran (GCC) 4.8.2
Copyright (C) 2013 Free Software Foundation, Inc.
GNU Fortran comes with NO WARRANTY, to the extent permitted by law.
You may redistribute copies of GNU Fortran
under the terms of the GNU General Public License.
For more information about these matters, see the file named COPYING
AOCC.LLVM.1.2.1.B29.2018_05_14 clang version 6.0.0 (CLANG:
  b6b3d31d6df08fb7da935a28842b39b7b3c2c55b) (llvm/cpu/llvm
  18855c80ed252fc4ba4ac41e2086627ef2bddd04) (based on LLVM
  AOCC.LLVM.1.2.1.B29.2018_05_14)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aocc1.2.1/AOCC-1.2.1-Compiler/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
clang

Fortran benchmarks:
clang gfortran

Benchmarks using both Fortran and C:
clang gfortran

Benchmarks using Fortran, C, and C++:
clang++ clang 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:
-flto -fuse-ld=lld -Wl,-mllvm -Wl,-function-specialize -O3
-ffast-math -march=znver1 -fstruct-layout=3
-mllvm -unroll-threshold=50 -fremap-arrays -mno-avx2
-mllvm -inline-threshold=1000 -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -function-specialize -z muldefs
-lamdlibm -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -ljemalloc

Fortran benchmarks:
-flto -fuse-ld=lld -Wl,-mllvm -Wl,-function-specialize -O3
-funroll-loops -ffast-math -z muldefs -lamdlibm -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ljemalloc -lgfortran

Benchmarks using both Fortran and C:
-flto -fuse-ld=lld -Wl,-mllvm -Wl,-function-specialize -O3
-ffast-math -march=znver1 -fstruct-layout=3
-mllvm -unroll-threshold=50 -fremap-arrays -mno-avx2
-mllvm -inline-threshold=1000 -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -function-specialize -funroll-loops
-z muldefs -lamdlibm -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ljemalloc -lgfortran

Benchmarks using Fortran, C, and C++:
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -flto -fuse-ld=lld
-Wl,-mllvm -Wl,-function-specialize -O3 -ffast-math -march=znver1
-fstruct-layout=3 -mllvm -unroll-threshold=50 -fremap-arrays -mno-avx2
-mllvm -inline-threshold=1000 -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -function-specialize
-mllvm -unroll-threshold=100 -mllvm -enable-partial-unswitch

(Continued on next page)

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):
-funroll-loops -z muldefs -lamdlibm -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ljemalloc

Base Other Flags

C benchmarks:
-Wno-return-type -DUSE_OPENMP

Fortran benchmarks:
-DUSE_OPENMP -Wno-return-type

Benchmarks using both Fortran and C:
-DUSE_OPENMP -Wno-return-type

Benchmarks using Fortran, C, and C++:
-Wno-return-type -DUSE_OPENMP

Peak Compiler Invocation

C benchmarks:
clang

Fortran benchmarks:
clang gfortran

Benchmarks using both Fortran and C:
clang gfortran

Benchmarks using Fortran, C, and C++:
clang++ clang gfortran

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

```
-flto -fuse-ld=lld -Wl,-mllvm -Wl,-function-specialize -Ofast
-march=znver1 -mno-sse4a -fstruct-layout=5
-mllvm -vectorize-memory-aggressively -mno-avx2
-mllvm -unroll-threshold=50 -fremap-arrays
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-flv-function-specialization -mllvm -enable-vectorize-compares
-z muldefs -lamdlibm -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp
-ljemalloc
```

Fortran benchmarks:

```
-flto -fuse-ld=lld -Wl,-mllvm -Wl,-function-specialize -O3
-funroll-loops -ffast-math -z muldefs -lamdlibm -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ljemalloc -lgfortran
```

Benchmarks using both Fortran and C:

```
-flto -fuse-ld=lld -Wl,-mllvm -Wl,-function-specialize -Ofast
-march=znver1 -mno-sse4a -fstruct-layout=5
-mllvm -vectorize-memory-aggressively -mno-avx2
-mllvm -unroll-threshold=50 -fremap-arrays
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-flv-function-specialization -mllvm -enable-vectorize-compares -O3
-funroll-loops -ffast-math -z muldefs -lamdlibm -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ljemalloc -lgfortran
```

Benchmarks using Fortran, C, and C++:

```
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -flto -fuse-ld=lld
-Wl,-mllvm -Wl,-function-specialize -Ofast -march=znver1 -mno-sse4a
-fstruct-layout=5 -mllvm -vectorize-memory-aggressively -mno-avx2
-mllvm -unroll-threshold=50 -fremap-arrays
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-flv-function-specialization -mllvm -enable-vectorize-compares
-mllvm -unroll-threshold=100 -O3 -funroll-loops -ffast-math
-z muldefs -lamdlibm -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-inline-threshold:1000 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ljemalloc
```

Peak Other Flags

C benchmarks:

```
-Wno-return-type -DUSE_OPENMP
```

(Continued on next page)

Peak Other Flags (Continued)

Fortran benchmarks:
-DUSE_OPENMP -Wno-return-type

Benchmarks using both Fortran and C:
-DUSE_OPENMP -Wno-return-type

Benchmarks using Fortran, C, and C++:
-Wno-return-type -DUSE_OPENMP

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/aocc100-flags-revC-I.2018-11-13.html
http://www.spec.org/cpu2017/flags/gcc.2018-02-16.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc100-flags-revC-I.2018-11-13.xml
http://www.spec.org/cpu2017/flags/gcc.2018-02-16.xml

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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