SPEC® CPU2017 Floating Point Rate Result

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Sugon

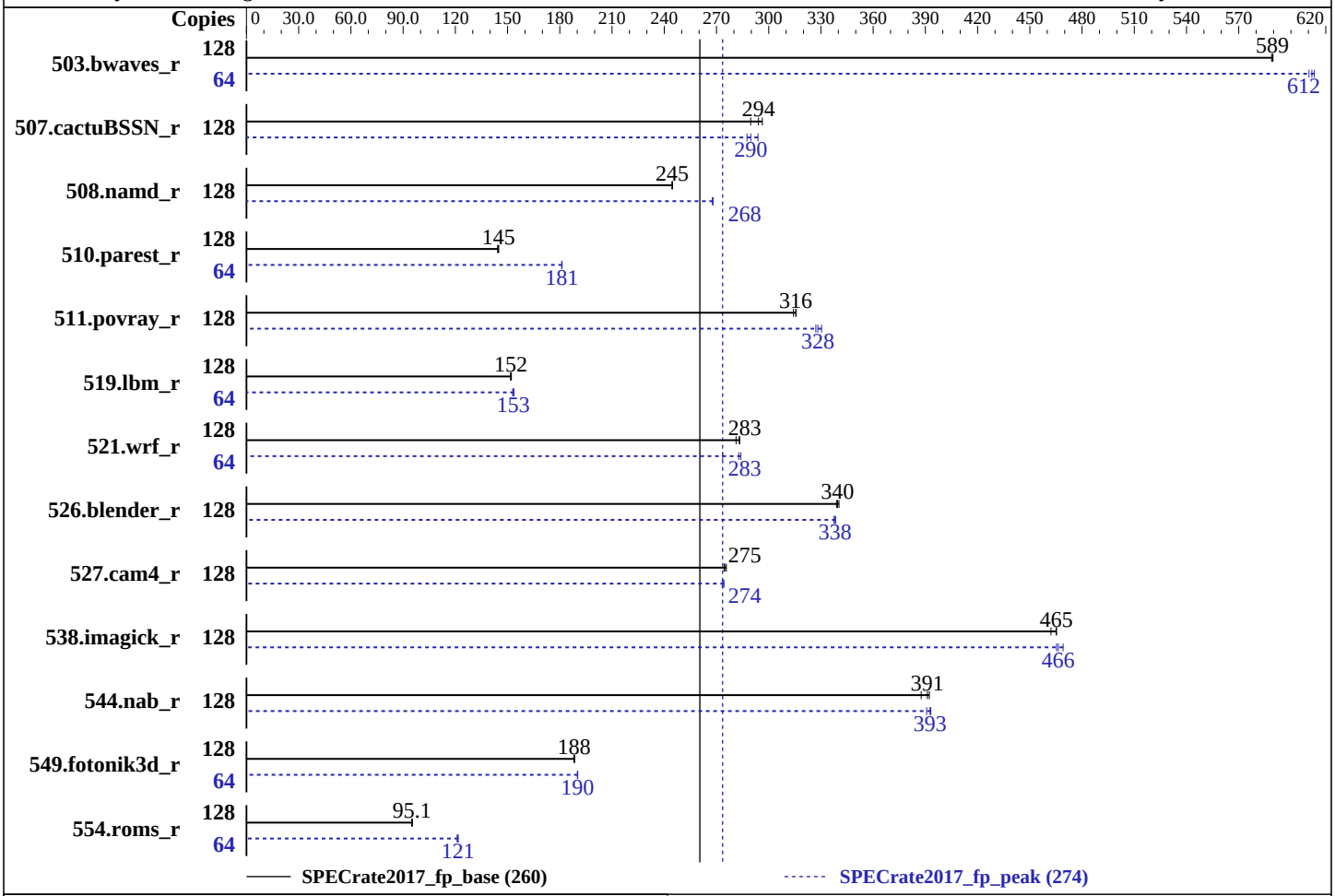
Sugon A620-G30 (AMD EPYC 7601)

SPECrate2017_fp_base = 260

SPECrate2017_fp_peak = 274

CPU2017 License: 9046
Test Sponsor: Sugon
Tested by: Sugon

Test Date: Dec-2017
Hardware Availability: Dec-2017
Software Availability: Nov-2017



Hardware

CPU Name: AMD EPYC 7601
Max MHz.: 3200
Nominal: 2200
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 4Rx4 PC4-2667V-L)
Storage: 1 x 800 GB SATA, SSD
Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP3 x86_64
kernel 4.4.73-5-default

Compiler: C/C++: Version 1.0.0 of AOCC
Fortran: Version 4.8.2 of GCC
Parallel: No
Firmware: American Megatrends Inc. BIOS Version 0WYSZ018 released Aug-2017
File System: ext4
System State: Run level 3 (Multi User)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit

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Software (Continued)

Other: jemalloc: jemalloc memory allocator library V4.5.0;
jemalloc: configured and built with GCC v4.8.5 in RHEL v7.2 under default conditions.
jemalloc: sources available from jemalloc.net or releases

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	128	2177	590	**2178**	**589**	2180	589	64	1051	610	**1049**	**612**	1046	613
507.cactuBSSN_r	128	**551**	**294**	559	290	547	296	128	564	288	551	294	**559**	**290**
508.namd_r	128	498	244	497	245	**497**	**245**	128	**454**	**268**	454	268	454	268
510.parest_r	128	2321	144	**2313**	**145**	2312	145	64	923	181	**924**	**181**	925	181
511.povray_r	128	951	314	**947**	**316**	947	316	128	**911**	**328**	905	330	914	327
519.lbm_r	128	**888**	**152**	886	152	889	152	64	439	154	**440**	**153**	441	153
521.wrf_r	128	1012	283	1019	281	**1013**	**283**	64	524	274	**507**	**283**	505	284
526.blender_r	128	575	339	573	340	**574**	**340**	128	576	338	**576**	**338**	578	338
527.cam4_r	128	812	276	**815**	**275**	816	274	128	816	274	**818**	**274**	819	273
538.imagick_r	128	689	462	684	465	**684**	**465**	128	679	469	**683**	**466**	684	465
544.nab_r	128	556	388	549	392	**551**	**391**	128	551	391	548	393	**549**	**393**
549.fotonik3d_r	128	**2648**	**188**	2651	188	2646	188	64	1311	190	1312	190	**1311**	**190**
554.roms_r	128	**2138**	**95.1**	2141	95.0	2135	95.3	64	841	121	836	122	**837**	**121**

SPECrate2017_fp_base = 260

SPECrate2017_fp_peak = 274

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

Submit Notes

```
The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.
```

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
```

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Operating System Notes (Continued)

```
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)

Huge pages were not configured for this run.
```

General Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/amd1704-rate-libs-revC/64;/home/cpu2017/amd1704-rate-libs-revC/32:"
MALLOC_CONF = "lg_chunk:28"

The AMD64 AOCC Compiler Suite is available at
http://developer.amd.com/tools-and-sdks/cpu-development/amd-optimizing-cc-compiler/

Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using RHEL 7.4

jemalloc, a general purpose malloc implementation, was obtained at
https://github.com/jemalloc/jemalloc/releases/download/4.5.0/jemalloc-4.5.0.tar.bz2
jemalloc was built with GCC v4.8.5 in RHEL v7.2 under default conditions.
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.

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

The AOCC Fortran Plugin version 1.0 was used to leverage AOCC optimizers
with gfortran. It is available here:
http://developer.amd.com/amd-aocc/
```

Platform Notes

```
BIOS settings:
Determinism Slider = Power
cTDP Control = Manual
cTDP = 200
This system Sugon A620-G30 is electrically equivalent to Sugon A420-G30 populated with the same processors and memories.
This result is tested on a Sugon A620-G30 system.
 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
 running on localhost Tue Dec 12 10:09:10 2017
```

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Platform Notes (Continued)

```
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 7601 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 2 3 4 5 6 7
      physical 1: 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):                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 7601 32-Core Processor
     Stepping:              2
     CPU MHz:               1200.000
     CPU max MHz:           2200.0000
     CPU min MHz:           1200.0000
     BogoMIPS:              4391.27
     Virtualization:        AMD-V
     L1d cache:             32K
     L1i cache:             64K
     L2 cache:              512K
     L3 cache:              8192K
     NUMA node0 CPU(s):     0-7,64-71
     NUMA node1 CPU(s):     8-15,72-79
     NUMA node2 CPU(s):     16-23,80-87
     NUMA node3 CPU(s):     24-31,88-95
     NUMA node4 CPU(s):     32-39,96-103
     NUMA node5 CPU(s):     40-47,104-111
     NUMA node6 CPU(s):     48-55,112-119
     NUMA node7 CPU(s):     56-63,120-127
```

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Platform Notes (Continued)

```
      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 extd_apicid amd_dcm aperfmperf eagerfpu 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_l2 mwaitx arat cpb
      hw_pstate npt lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
      pausefilter pfthreshold vmmcall avic fsgsbase bmi1 avx2 smep bmi2 rdseed adx smap
      clflushopt sha_ni xsaveopt xsavec xgetbv1 clzero irperf 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 1 2 3 4 5 6 7 64 65 66 67 68 69 70 71
    node 0 size: 128912 MB
    node 0 free: 128691 MB
    node 1 cpus: 8 9 10 11 12 13 14 15 72 73 74 75 76 77 78 79
    node 1 size: 129021 MB
    node 1 free: 128817 MB
    node 2 cpus: 16 17 18 19 20 21 22 23 80 81 82 83 84 85 86 87
    node 2 size: 129021 MB
    node 2 free: 128811 MB
    node 3 cpus: 24 25 26 27 28 29 30 31 88 89 90 91 92 93 94 95
    node 3 size: 129021 MB
    node 3 free: 128819 MB
    node 4 cpus: 32 33 34 35 36 37 38 39 96 97 98 99 100 101 102 103
    node 4 size: 129021 MB
    node 4 free: 128848 MB
    node 5 cpus: 40 41 42 43 44 45 46 47 104 105 106 107 108 109 110 111
    node 5 size: 129021 MB
    node 5 free: 128848 MB
    node 6 cpus: 48 49 50 51 52 53 54 55 112 113 114 115 116 117 118 119
    node 6 size: 129021 MB
    node 6 free: 128855 MB
    node 7 cpus: 56 57 58 59 60 61 62 63 120 121 122 123 124 125 126 127
    node 7 size: 129020 MB
    node 7 free: 128851 MB
    node distances:
    node   0   1   2   3   4   5   6   7
      0:  10  16  16  16  32  32  32  32
      1:  16  10  16  16  32  32  32  32
      2:  16  16  10  16  32  32  32  32
      3:  16  16  16  10  32  32  32  32
      4:  32  32  32  32  10  16  16  16
```

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Platform Notes (Continued)

```
     5:  32  32  32  32  16  10  16  16
     6:  32  32  32  32  16  16  10  16
     7:  32  32  32  32  16  16  16  10

From /proc/meminfo
   MemTotal:       1056829576 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

/usr/bin/lsb_release -d
   SUSE Linux Enterprise Server 12 SP3

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 3
      # This file is deprecated and will be removed in a future service pack or release.
      # Please check /etc/os-release for details about this release.
   os-release:
      NAME="SLES"
      VERSION="12-SP3"
      VERSION_ID="12.3"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp3"

uname -a:
   Linux localhost 4.4.73-5-default #1 SMP Tue Jul 4 15:33:39 UTC 2017 (b7ce4e4) x86_64
   x86_64 x86_64 GNU/Linux

run-level 3 Dec 8 10:11

SPEC is set to: /home/cpu2017
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda4      ext4  722G  171G  551G  24% /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.
  BIOS American Megatrends Inc. 0WYSZ018 08/22/2017
  Memory:
   16x Micron Technology 72ASS8G72LZ-2G6B2 64 GB 4 rank 2666
   16x Unknown Unknown
```

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Platform Notes (Continued)

```
 (End of data from sysinfo program)
```

Compiler Version Notes

```
==============================================================================
 CC  519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
------------------------------------------------------------------------------

==============================================================================
 CXXC 508.namd_r(base, peak) 510.parest_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
------------------------------------------------------------------------------

==============================================================================
 CC  511.povray_r(base, peak) 526.blender_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
------------------------------------------------------------------------------

==============================================================================
 FC  507.cactuBSSN_r(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
```


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Compiler Version Notes (Continued)

```
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
AOCC.LLVM.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
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
------------------------------------------------------------------------------

==============================================================================
 FC  503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(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
------------------------------------------------------------------------------

==============================================================================
 CC  521.wrf_r(base, peak) 527.cam4_r(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.4.0.0.B35.2017_04_26 clang version 4.0.0 (CLANG:) (based on LLVM
  AOCC.LLVM.4.0.0.B35.2017_04_26)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/AOCC-1.0-Compiler/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
clang

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Base Compiler Invocation (Continued)

C++ benchmarks:
clang++

Fortran benchmarks:
clang gfortran

Benchmarks using both Fortran and C:
clang gfortran

Benchmarks using both C and C++:
clang++ clang

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

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_CASE_FLAG -fconvert=big-endian -DSPEC_LP64
526.blender_r: -funsigned-char -D__BOOL_DEFINED -DSPEC_LP64
527.cam4_r: -DSPEC_CASE_FLAG -DSPEC_LP64
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -disable-vect-cmp -O3 -ffast-math
-march=znver1 -fstruct-layout=2 -mllvm -unroll-threshold=100
-fremap-arrays -mno-avx2 -inline-threshold=1000 -z muldefs -ljemalloc

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Base Optimization Flags (Continued)

C++ benchmarks:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -disable-vect-cmp -O3
-march=znver1 -mllvm -unroll-threshold=100 -finline-aggressive
-fremap-arrays -inline-threshold=1000 -z muldefs -ljemalloc

Fortran benchmarks:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -disable-vect-cmp -O3(gfortran)
-O3(clang) -mavx -madx -funroll-loops -ffast-math -z muldefs
-fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option="-merge-constant -disable-vect-cmp"
-ljemalloc -lgfortran -lamdlibm

Benchmarks using both Fortran and C:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -disable-vect-cmp -O3(clang)
-ffast-math -march=znver1 -fstruct-layout=2 -mllvm
-unroll-threshold=100 -fremap-arrays -mno-avx2 -inline-threshold=1000
-O3(gfortran) -mavx -madx -funroll-loops -z muldefs
-fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option="-merge-constant -disable-vect-cmp"
-ljemalloc -lgfortran -lamdlibm

Benchmarks using both C and C++:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -disable-vect-cmp -O3 -ffast-math
-march=znver1 -fstruct-layout=2 -mllvm -unroll-threshold=100
-fremap-arrays -mno-avx2 -inline-threshold=1000 -finline-aggressive
-z muldefs -ljemalloc

Benchmarks using Fortran, C, and C++:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -disable-vect-cmp -O3(clang)
-ffast-math -march=znver1 -fstruct-layout=2 -mllvm
-unroll-threshold=100 -fremap-arrays -mno-avx2 -inline-threshold=1000
-finline-aggressive -O3(gfortran) -mavx -madx -funroll-loops
-z muldefs -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option="-merge-constant -disable-vect-cmp"
-ljemalloc

Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
clang gfortran

Benchmarks using both Fortran and C:
clang gfortran

Benchmarks using both C and C++:
clang++ clang

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
-fstruct-layout=3 -mllvm -vectorize-memory-aggressively -mno-avx2
-unroll-threshold=100 -fremap-arrays -inline-threshold=1000 -ljemalloc

C++ benchmarks:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
-finline-aggressive -mllvm -unroll-threshold=100 -fremap-arrays
-inline-threshold=1000 -ljemalloc

Fortran benchmarks:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -O3(gfortran) -O3(clang) -mavx2
-madx -funroll-loops -ffast-math -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option="-merge-constant
-inline-threshold:1000" -ljemalloc -lgfortran -lamdlibm

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

521.wrf_r: -flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -O3(clang) -mavx
-ffast-math -O3(gfortran) -funroll-loops
-fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option="-merge-constant
-inline-threshold:1000" -ljemalloc -lgfortran -lamdlibm

527.cam4_r: -flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
-fstruct-layout=3 -mllvm -vectorize-memory-aggressively
-mno-avx2 -unroll-threshold=100 -fremap-arrays
-inline-threshold=1000 -O3(gfortran) -O3(clang) -mavx2
-madx -funroll-loops -ffast-math -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option="-merge-constant
-inline-threshold:1000" -ljemalloc -lgfortran -lamdlibm

Benchmarks using both C and C++:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
-fstruct-layout=3 -mllvm -vectorize-memory-aggressively -mno-avx2
-unroll-threshold=100 -fremap-arrays -inline-threshold=1000
-finline-aggressive -ljemalloc

Benchmarks using Fortran, C, and C++:
-flto -Wl,-plugin-opt= -merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
-fstruct-layout=3 -mllvm -vectorize-memory-aggressively -mno-avx2
-unroll-threshold=100 -fremap-arrays -inline-threshold=1000
-finline-aggressive -O3 -mavx2 -madx -funroll-loops -ffast-math
-fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option="-merge-constant
-inline-threshold:1000" -ljemalloc

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/gcc.2017-11-20.html
http://www.spec.org/cpu2017/flags/aocc100-flags-revC-I.html
http://www.spec.org/cpu2017/flags/Sugon-Naples-Platform-Settings-revC-I.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/gcc.2017-11-20.xml
http://www.spec.org/cpu2017/flags/aocc100-flags-revC-I.xml
http://www.spec.org/cpu2017/flags/Sugon-Naples-Platform-Settings-revC-I.xml

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