# SPEC CPU®2017 Floating Point Speed Result

## Dell Inc.

**PowerEdge R6515 (AMD EPYC 7552, 2.20 GHz)**

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed®2017_fp_base = 113</th>
<th>SPECspeed®2017_fp_peak = 116</th>
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<tbody>
<tr>
<td>603.bwaves_s</td>
<td>48</td>
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<tr>
<td>607.cactuBSSN_s</td>
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<td>619.lbm_s</td>
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<tr>
<td>621.wrf_s</td>
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<td>627.cam4_s</td>
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<tr>
<td>628.pop2_s</td>
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<td>638.imagick_s</td>
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<td>644.nab_s</td>
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<td>649.fotonik3d_s</td>
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</tr>
<tr>
<td>654.roms_s</td>
<td>48</td>
<td>190</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** AMD EPYC 7552
- **Max MHz:** 3300
- **Nominal:** 2200
- **Enabled:** 48 cores, 1 chip, 2 threads/core
- **Orderable:** 1 chip
- **Cache L1:** 32 KB I + 32 KB D on chip per core
- **L2:** 512 KB I+D on chip per core
- **L3:** 192 MB I+D on chip per chip, 16 MB shared / 4 cores
- **Other:** None
- **Memory:** 256 GB (8 x 32 GB 2Rx4 PC4-3200AA-R, running at 3200)
- **Storage:** 1 x 960 GB SATA SSD
- **Other:** None

### Software

- **OS:** SUSE Linux Enterprise Server 15 SP1
  
  kernel 4.12.14-195-default
- **Compiler:** C/C++/Fortran: Version 2.0.0 of AOCC
- **Parallel:** Yes
- **Firmware:** Version 1.1.6 released Oct-2019
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** jemalloc: jemalloc memory allocator library v5.1.0
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage.

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SPEC CPU®2017 Floating Point Speed Result

Dell Inc.
PowerEdge R6515 (AMD EPYC 7552, 2.20 GHz)

SPECspeed®2017_fp_base = 113
SPECspeed®2017_fp_peak = 116

Results Table

<table>
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<th>Seconds</th>
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<td>123</td>
</tr>
</tbody>
</table>

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/

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
runcpu command invoked through numacl i.e.:
numacl --interleave=all runcpu <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 set to 'always' for this run (OS default)
Dell Inc. PowerEdge R6515 (AMD EPYC 7552, 2.20 GHz)

SPECspeed®2017_fp_base = 113
SPECspeed®2017_fp_peak = 116

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-95"
LD_LIBRARY_PATH =
  "/root/cpu2017-1.1.0/amd_speed_aocc200_rome_C_lib/64;/root/cpu2017-1.1.0/amd_speed_aocc200_rome_C_lib/32:"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "96"

Environment variables set by runcpu during the 621.wrf_s peak run:
GOMP_CPU_AFFINITY = "0-47"

Environment variables set by runcpu during the 628.pop2_s peak run:
GOMP_CPU_AFFINITY = "0-47"

Environment variables set by runcpu during the 644.nab_s peak run:
GOMP_CPU_AFFINITY = "0 48 1 49 2 50 3 51 4 52 5 53 6 54 7 55 8 56 9 57 10 58 11 59 12 60 13 61 14 62 15 63 16 64 17 65 18 66 19 67 20 68 21 69 22 70 23 71 24 72 25 73 26 74 27 75 28 76 29 77 30 78 31 79 32 80 33 81 34 82 35 83 36 84 37 85 38 86 39 87 40 88 41 89 42 90 43 91 44 92 45 93 46 94 47 95"

Environment variables set by runcpu during the 649.fotonik3d_s peak run:
GOMP_CPU_AFFINITY = "0-47"

Environment variables set by runcpu during the 654.roms_s peak run:
GOMP_CPU_AFFINITY = "0-47"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using Fedora 26

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 v9.1.0 in Ubuntu 19.04 with -O3 -znver2 -flto
ejemalloc 5.1.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2
Platform Notes

BIOS settings:
- NUMA Nodes Per Socket set to 2
- CCX as NUMA Domain set to Enabled
- System Profile set to Custom
- CPU Power Management set to Maximum Performance
- Memory Frequency set to Maximum Performance
- Turbo Boost Enabled
- Cstates set to Enabled
- Memory Patrol Scrub Disabled
- Memory Refresh Rate set to 1x
- PCI ASPM L1 Link Power Management Disabled
- Determinism Slider set to Power Determinism
- Efficiency Optimized Mode Disabled

Sysinfo program /root/cpu2017-1.1.0/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011
running on linux-g3ob Fri Oct 11 10:09:00 2019

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 7552 48-Core Processor
- 1 "physical id"s (chips)
- 96 "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: 48
  - siblings: 96
  - physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

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): 96
- On-line CPU(s) list: 0-95
- Thread(s) per core: 2
- Core(s) per socket: 48
- Socket(s): 1
- NUMA node(s): 12
- Vendor ID: AuthenticAMD
- CPU family: 23
- Model: 49

(Continued on next page)
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**SPECspeed®2017_fp_base = 113**

**SPECspeed®2017_fp_peak = 116**

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**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** Oct-2019  
**Hardware Availability:** Feb-2020  
**Software Availability:** Aug-2019

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**Platform Notes (Continued)**

- **Model name:** AMD EPYC 7552 48-Core Processor  
- **Stepping:** 0  
- **CPU MHz:** 2195.819  
- **BogoMIPS:** 4391.63  
- **Virtualization:** AMD-V  
- **L1d cache:** 32K  
- **L1i cache:** 32K  
- **L2 cache:** 512K  
- **L3 cache:** 16384K  
- **NUMA node0 CPU(s):** 0-3,48-51  
- **NUMA node1 CPU(s):** 4-7,52-55  
- **NUMA node2 CPU(s):** 8-11,56-59  
- **NUMA node3 CPU(s):** 12-15,60-63  
- **NUMA node4 CPU(s):** 16-19,64-67  
- **NUMA node5 CPU(s):** 20-23,68-71  
- **NUMA node6 CPU(s):** 24-27,72-75  
- **NUMA node7 CPU(s):** 28-31,76-79  
- **NUMA node8 CPU(s):** 32-35,80-83  
- **NUMA node9 CPU(s):** 36-39,84-87  
- **NUMA node10 CPU(s):** 40-43,88-91  
- **NUMA node11 CPU(s):** 44-47,92-95

- **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 noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good noplap tsc rep_good nopla

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From `numactl --hardware`:

- **WARNING:** a numactl 'node' might or might not correspond to a physical chip.
- **available:** 12 nodes (0-11)  
  - node 0 cpus: 0 1 2 3 48 49 50 51  
  - node 0 free: 20923 MB  
  - node 0 size: 20772 MB  
  - node 1 cpus: 4 5 6 7 52 53 54 55  
  - node 1 free: 21501 MB  
  - node 1 size: 21455 MB  
  - node 2 cpus: 8 9 10 11 56 57 58 59  
  - node 2 size: 21503 MB

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CPU2017 License: 55
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Test Date: Oct-2019
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Platform Notes (Continued)

node 2 free: 21413 MB
dnode 3 cpus: 12 13 14 15 60 61 62 63
dnode 3 size: 21501 MB
dnode 3 free: 21397 MB
node 4 cpus: 16 17 18 19 64 65 66 67
node 4 size: 21501 MB
node 4 free: 21442 MB
node 5 cpus: 20 21 22 23 68 69 70 71
node 5 size: 21502 MB
node 5 free: 21401 MB
node 6 cpus: 24 25 26 27 72 73 74 75
node 6 size: 21501 MB
node 6 free: 21375 MB
node 7 cpus: 28 29 30 31 76 77 78 79
node 7 size: 21501 MB
node 7 free: 21463 MB
node 8 cpus: 32 33 34 35 80 81 82 83
node 8 size: 21503 MB
node 8 free: 21467 MB
node 9 cpus: 36 37 38 39 84 85 86 87
node 9 size: 21501 MB
node 9 free: 21445 MB
node 10 cpus: 40 41 42 43 88 89 90 91
node 10 size: 21472 MB
node 10 free: 21439 MB
node 11 cpus: 44 45 46 47 92 93 94 95
node 11 size: 21488 MB
node 11 free: 21452 MB
node distances:

From /proc/meminfo
MemTotal: 263581804 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
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Platform Notes (Continued)

From /etc/*release* /etc/*version*

os-release:
NAME="SLES"
VERSION="15-SP1"
VERSION_ID="15.1"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp1"

uname -a:
Linux linux-g3ob 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019 (8fba516)
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault): Not affected
Microarchitectural Data Sampling: Not affected
CVE-2017-5754 (Meltdown): Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline, IBPB:
conditional, IBRS_FW, STIBP: conditional, RSB filling

run-level 3 Oct 11 04:49 last=5

SPEC is set to: /root/cpu2017-1.1.0

From /sys/devices/virtual/dmi/id
BIOS: Dell Inc. 1.1.6 10/02/2019
Vendor: Dell Inc.
Product: PowerEdge R6515
Product Family: PowerEdge

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 SM BIOS" standard.

Memory:
8x 80AD863280AD HMA84GR7CJR4N-XN 32 GB 2 rank 3200
8x Not Specified Not Specified

(Continued on next page)
## Platform Notes (Continued)

(End of data from sysinfo program)

### Compiler Version Notes

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<table>
<thead>
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<tbody>
<tr>
<td><strong>C</strong></td>
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<td>619.ibm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base, peak)</td>
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AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

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<td>C++, C, Fortran</td>
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CPU2017 License: 55
Test Sponsor: Dell Inc.
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Compiler Version Notes (Continued)

==============================================================================
Fortran, C      | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)
------------------------------------------------------------------------------
AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
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Target: x86_64-unknown-linux-gnu
Thread model: posix
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==============================================================================

Base Compiler Invocation

C benchmarks:
clang

Fortran benchmarks:
flang

Benchmarks using both Fortran and C:
flang clang

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

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.ibm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
627.cam4_s: -DSPEC_CASE_FLAG -DSPEC_LP64
628.pop2_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64
Dell Inc.

PowerEdge R6515 (AMD EPYC 7552, 2.20 GHz)

SPECspeed®2017_fp_base = 113
SPECspeed®2017_fp_peak = 116

Base Optimization Flags

C benchmarks:
- -flto -Wl,-mllvm -Wl,-function-specialize
- -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
- -march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50
- -fremap-arrays -mllvm -function-specialize -mllvm -enable-gvn-hoist
- -mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp
- -mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000
- -flv-function-specialization -z muldefs -DSPEC_OPENMP -fopenmp
- -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
- -ljemalloc -lflang

Fortran benchmarks:
- -flto -Wl,-mllvm -Wl,-function-specialize
- -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver2
- -funroll-loops -Mrecursive -mllvm -vector-library=LIBMVEC -z muldefs
- -Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp -DUSE_OPENMP
- -fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc
- -lflang

Benchmarks using both Fortran and C:
- -flto -Wl,-mllvm -Wl,-function-specialize
- -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
- -march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50
- -fremap-arrays -mllvm -function-specialize -mllvm -enable-gvn-hoist
- -mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp
- -mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000
- -flv-function-specialization -funroll-loops -Mrecursive -z muldefs
- -Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp -DUSE_OPENMP
- -fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc
- -lflang

Benchmarks using Fortran, C, and C++:
- -std=c++98 -flto -Wl,-mllvm -Wl,-function-specialize
- -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mllvm -Wl,-reduce-array-computations=3
- -Wl,-mllvm -Wl,-suppress-fmas -O3 -ffast-math -march=znver2
- -fstruct-layout=3 -mllvm -unroll-threshold=50 -fremap-arrays
- -mllvm -function-specialize -mllvm -enable-gvn-hoist
- -mllvm -reduce-array-computations=3 -mllvm -global-vectorize-slp
- -mllvm -vector-library=LIBMVEC -mllvm -inline-threshold=1000
- -flv-function-specialization -mllvm -loop-unschedule-threshold=200000
- -mllvm -unroll-threshold=100 -mllvm -enable-partial-unschedule
- -funroll-loops -Mrecursive -z muldefs -Kieee -fno-finite-math-only

(Continued on next page)
**Dell Inc.**
PowerEdge R6515 (AMD EPYC 7552, 2.20 GHz)

<table>
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<tr>
<th>SPECspeed²017_fp_base</th>
<th>SPECspeed²017_fp_peak</th>
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<td>116</td>
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</table>

| Test Date:          | Oct-2019            |
| Hardware Availability: | Feb-2020       |
| Software Availability: | Aug-2019        |

**Base Optimization Flags (Continued)**

Benchmarks using Fortran, C, and C++ (continued):
-DSPEC_OPENMP -fopenmp -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread
-ldl -lmvec -lamdlibm -ljemalloc -lfalg

**Base Other Flags**

C benchmarks:
-Wno-return-type

Fortran benchmarks:
-Wno-return-type

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

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

**Peak Compiler Invocation**

C benchmarks:
clang

Fortran benchmarks:
flang

Benchmarks using both Fortran and C:
flang clang

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

**Peak Portability Flags**

Same as Base Portability Flags
Peak Optimization Flags

C benchmarks:

619.lbm_s: basepeak = yes

638.imagick_s: basepeak = yes

644.nab_s: -flto -Wl,-mllvm -Wl,-region-vectorize
          -Wl,-mllvm -Wl,-vector-library=LIBMVEC
          -Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
          -march=znver2 -mno-sse4 -fstruct-layout=5
          -mllvm -vectorize-memory-aggressively
          -mllvm -function-specialize -mllvm -enable-gvn-hoist
          -mllvm -unroll-threshold=50 -fremap-arrays
          -mllvm -vector-library=LIBMVEC
          -mllvm -reduce-array-computations=3
          -mllvm -global-vectorize-slp -mllvm -inline-threshold=1000
          -flv-function-specialization -DSPEC_OPENMP -fopenmp
          -DUSE_OPENMP -lmvec -lamdlibm -fopenmp=libomp -lomp
          -lpthread -ldl -ljemalloc -lflang

Fortran benchmarks:

603.bwaves_s: basepeak = yes

649.fotonik3d_s: -flto -Wl,-mllvm -Wl,-function-specialize
                  -Wl,-mllvm -Wl,-region-vectorize
                  -Wl,-mllvm -Wl,-vector-library=LIBMVEC
                  -Wl,-mllvm -Wl,-reduce-array-computations=3 -O3
                  -march=znver2 -funroll-loops -Mrecursive
                  -mllvm -vector-library=LIBMVEC -Kieee
                  -fno-finite-math-only -DSPEC_OPENMP -fopenmp -DUSE_OPENMP
                  -fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
                  -ljemalloc -lflang

654.roms_s: -flto -Wl,-mllvm -Wl,-function-specialize
              -Wl,-mllvm -Wl,-region-vectorize
              -Wl,-mllvm -Wl,-vector-library=LIBMVEC
              -Wl,-mllvm -Wl,-reduce-array-computations=3
              -Wl,-mllvm -Wl,-enable-X86-prefetching -O3 -march=znver2
              -funroll-loops -Mrecursive -mllvm -vector-library=LIBMVEC
              -Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp
              -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread -ldl
              -lmvec -lamdlibm -ljemalloc -lflang

(Continued on next page)
Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

621.wrf_s: -flto -Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-region-vectorize
-Wl,-mllvm -Wl,-vector-library=LIBMVEC
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=x86_64 -mno-sse4a -fstruct-layout=5
-mllvm -vectorize-memory-aggressively
-mllvm -function-specialize -mllvm -enable-gvn-hoist
-mllvm -unroll-threshold=50 -fremap-arrays
-mllvm -vector-library=LIBMVEC
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp -mllvm -inline-threshold=1000
-flv-function-specialization -O3 -funroll-loops
-Mrecursive -Kleee -fno-finite-math-only -DSPEC_OPENMP
-fopenmp -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread
-ldl -lm -lm -lflang

627.cam4_s: basepeak = yes

628.pop2_s: Same as 621.wrf_s

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

Peak Other Flags

C benchmarks:
- Wno-return-type

Fortran benchmarks:
- Wno-return-type

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

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

The flags files that were used to format this result can be browsed at
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<tr>
<th>Dell Inc.</th>
<th>SPEC CPU®2017 Floating Point Speed Result</th>
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<tr>
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<tr>
<td></td>
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<td>Software Availability: Aug-2019</td>
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</tbody>
</table>

You can also download the XML flags sources by saving the following links:


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