



SPEC® CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

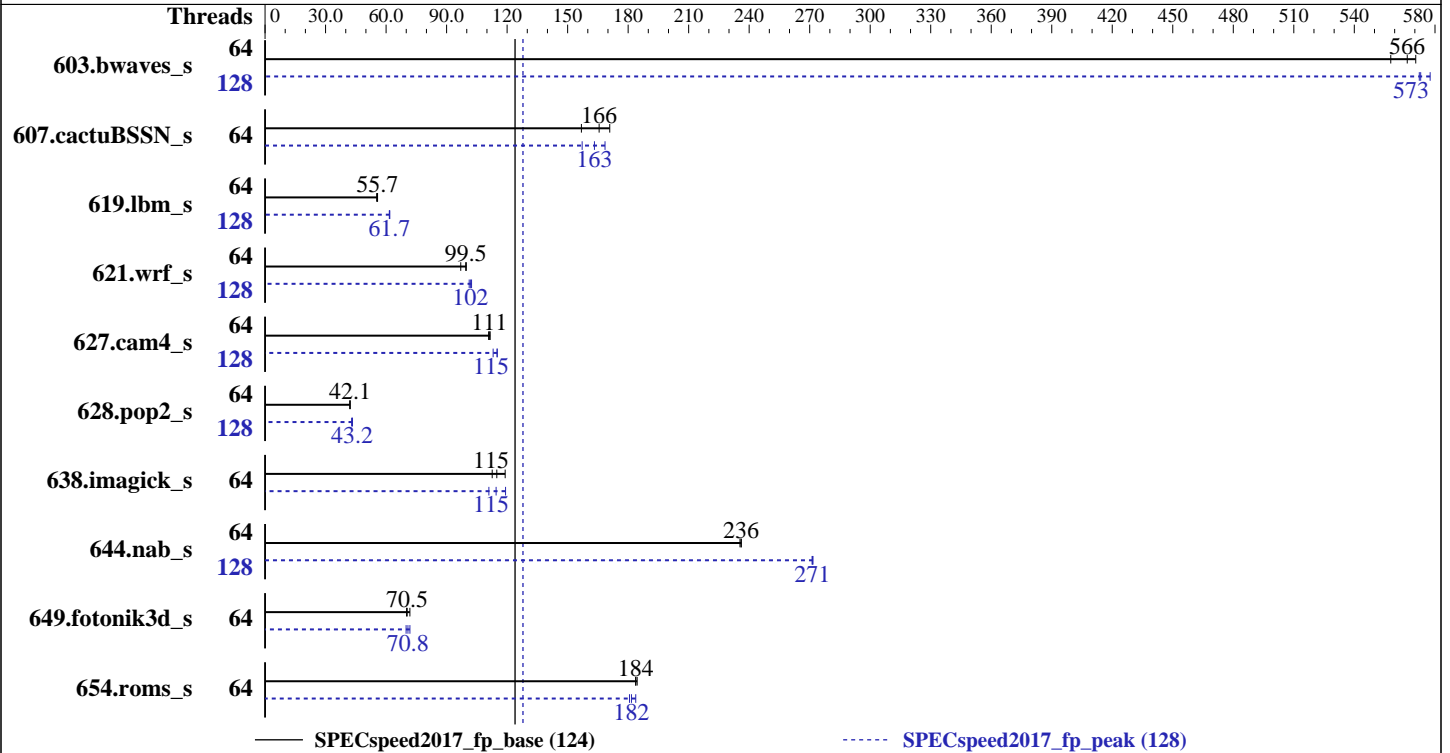
Test Date: Nov-2018

Test Sponsor: Dell Inc.

Hardware Availability: Dec-2018

Tested by: Dell Inc.

Software Availability: Oct-2018



Hardware

CPU Name: AMD EPYC 7501
 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



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Date: Nov-2018

Test Sponsor: Dell Inc.

Hardware Availability: Dec-2018

Tested by: Dell Inc.

Software Availability: Oct-2018

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	64	103	570	106	558	104	566	128	102	578	103	572	103	573
607.cactuBSSN_s	64	101	166	106	157	97.5	171	64	106	157	102	163	98.9	169
619.lbm_s	64	94.7	55.3	94.1	55.7	93.9	55.8	128	84.9	61.7	85.0	61.6	84.7	61.8
621.wrf_s	64	136	97.0	133	99.8	133	99.5	128	131	101	130	102	129	102
627.cam4_s	64	80.0	111	79.6	111	79.4	112	128	77.0	115	77.1	115	78.4	113
628.pop2_s	64	282	42.1	282	42.1	282	42.1	128	275	43.2	274	43.4	277	42.9
638.imagick_s	64	121	119	126	115	128	113	64	130	111	121	119	126	115
644.nab_s	64	74.2	235	74.0	236	74.0	236	128	64.4	271	64.3	272	64.4	271
649.fotonik3d_s	64	129	70.5	130	70.2	127	71.8	64	127	71.8	130	69.9	129	70.8
654.roms_s	64	85.7	184	85.4	184	85.7	184	64	86.7	182	85.7	184	87.1	181

SPECspeed2017_fp_base = **124**

SPECspeed2017_fp_peak = **128**

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)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2018

Hardware Availability: Dec-2018

Software Availability: Oct-2018

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
```

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Date: Nov-2018

Test Sponsor: Dell Inc.

Hardware Availability: Dec-2018

Tested by: Dell Inc.

Software Availability: Oct-2018

Platform Notes (Continued)

running on user-PowerEdge-R7425 Sun Nov 25 18:11:10 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 7501 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 7501 32-Core Processor

Stepping: 2

CPU MHz: 2801.269

BogoMIPS: 3992.58

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

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Date: Nov-2018

Test Sponsor: Dell Inc.

Hardware Availability: Dec-2018

Tested by: Dell Inc.

Software Availability: Oct-2018

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: 128617 MB
node 0 free: 128463 MB
node 1 cpus: 2 10 18 26 34 42 50 58 66 74 82 90 98 106 114 122
node 1 size: 129020 MB
node 1 free: 128898 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: 128841 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: 128812 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: 128802 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: 128903 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: 128904 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: 128864 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

```

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2018

Hardware Availability: Dec-2018

Software Availability: Oct-2018

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 25 11:10 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.

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2018

Hardware Availability: Dec-2018

Software Availability: Oct-2018

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/aoccl.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/aoccl.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/aoccl.2.1/AOCC-1.2.1-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

(Continued on next page)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Date: Nov-2018

Test Sponsor: Dell Inc.

Hardware Availability: Dec-2018

Tested by: Dell Inc.

Software Availability: Oct-2018

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
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 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/aoccl.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



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2018

Hardware Availability: Dec-2018

Software Availability: Oct-2018

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)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Date: Nov-2018

Test Sponsor: Dell Inc.

Hardware Availability: Dec-2018

Tested by: Dell Inc.

Software Availability: Oct-2018

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



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2018

Hardware Availability: Dec-2018

Software Availability: Oct-2018

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)



SPEC CPU2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed2017_fp_base = 124

PowerEdge R7425 (AMD EPYC 7501, 2.00GHz)

SPECspeed2017_fp_peak = 128

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2018

Hardware Availability: Dec-2018

Software Availability: Oct-2018

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>

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2017 v1.0.5 on 2018-11-25 19:11:09-0500.

Report generated on 2019-02-20 15:36:07 by CPU2017 PDF formatter v6067.

Originally published on 2018-12-11.