



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

## Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

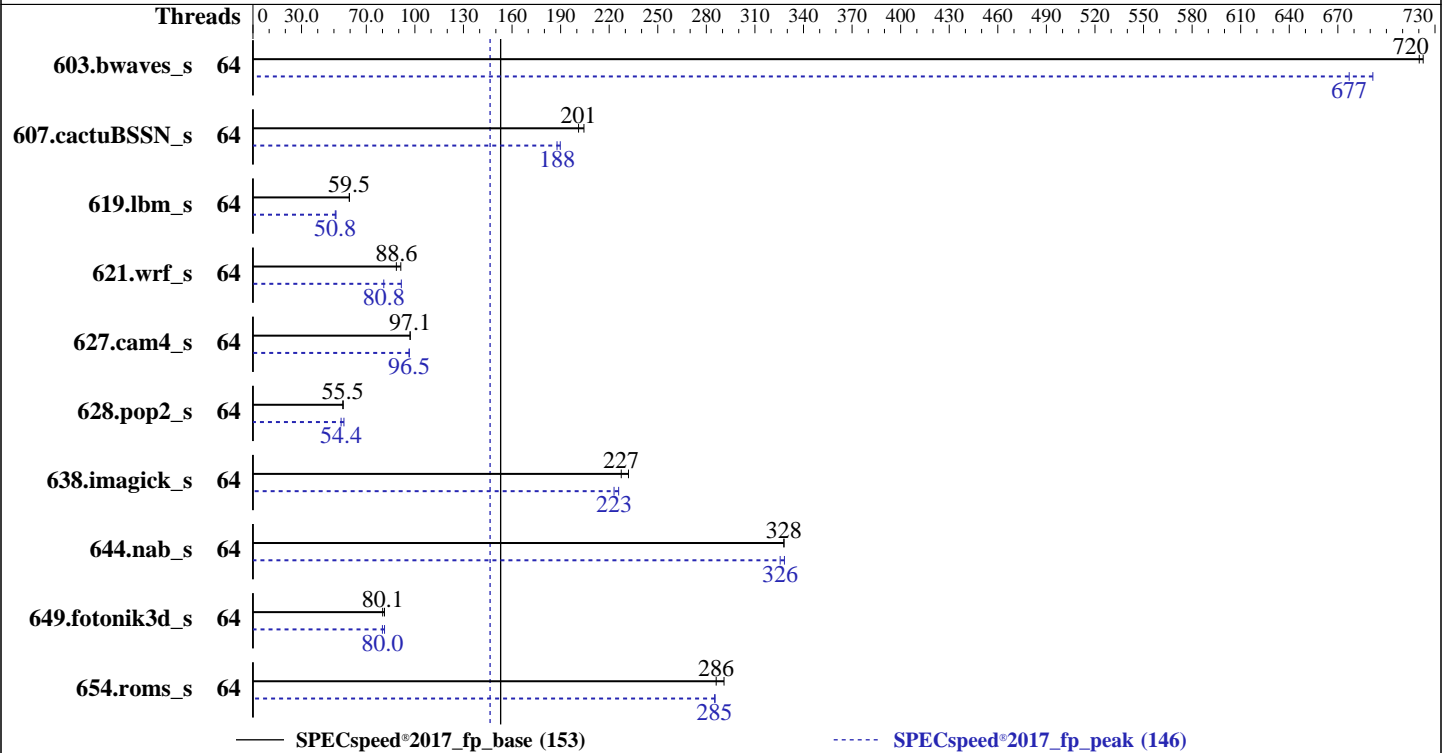
Test Date: Dec-2019

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2019

Tested by: Dell Inc.

Software Availability: Aug-2019



### Hardware

CPU Name: AMD EPYC 7532  
 Max MHz: 3300  
 Nominal: 2400  
 Enabled: 64 cores, 2 chips  
 Orderable: 1,2 chips  
 Cache L1: 32 KB I + 32 KB D on chip per core  
 L2: 512 KB I+D on chip per core  
 L3: 256 MB I+D on chip per chip, 16 MB shared / 2 cores  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R)  
 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 1.2.4 released Nov-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.



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECSpeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECSpeed®2017\_fp\_peak = 146

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

Test Date: Dec-2019  
Hardware Availability: Feb-2019  
Software Availability: Aug-2019

## Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	64	<b>81.9</b>	<b>720</b>	81.6	723			64	85.3	692	<b>87.1</b>	<b>677</b>		
607.cactuBSSN_s	64	<b>82.9</b>	<b>201</b>	81.6	204			64	87.8	190	<b>88.8</b>	<b>188</b>		
619.lbm_s	64	<b>88.1</b>	<b>59.5</b>	87.9	59.6			64	<b>103</b>	<b>50.8</b>	102	51.3		
621.wrf_s	64	<b>149</b>	<b>88.6</b>	145	91.3			64	<b>164</b>	<b>80.8</b>	144	91.6		
627.cam4_s	64	<b>91.3</b>	<b>97.1</b>	91.3	97.1			64	<b>91.8</b>	<b>96.5</b>	91.8	96.5		
628.pop2_s	64	213	55.8	<b>214</b>	<b>55.5</b>			64	211	56.2	<b>218</b>	<b>54.4</b>		
638.imagick_s	64	<b>63.4</b>	<b>227</b>	62.2	232			64	<b>64.7</b>	<b>223</b>	63.9	226		
644.nab_s	64	<b>53.3</b>	<b>328</b>	53.3	328			64	<b>53.7</b>	<b>326</b>	53.2	328		
649.fotonik3d_s	64	<b>114</b>	<b>80.1</b>	112	81.2			64	112	81.3	<b>114</b>	<b>80.0</b>		
654.roms_s	64	54.1	291	<b>55.0</b>	<b>286</b>			64	55.2	285	<b>55.2</b>	<b>285</b>		

SPECSpeed®2017\_fp\_base = **153**

SPECSpeed®2017\_fp\_peak = **146**

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 numactl i.e.:  
numactl --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)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

GOMP\_CPU\_AFFINITY = "0-63"

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 = "64"

Environment variables set by runcpu during the 603.bwaves\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

Environment variables set by runcpu during the 607.cactuBSSN\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

Environment variables set by runcpu during the 619.lbm\_s peak run:

GOMP\_CPU\_AFFINITY = "0 32 1 33 2 34 3 35 4 36 5 37 6 38 7 39 8 40 9 41 10 42  
11 43 12 44 13 45 14 46 15 47 16 48 17 49 18 50 19 51 20 52 21 53 22 54  
23 55 24 56 25 57 26 58 27 59 28 60 29 61 30 62 31 63"

Environment variables set by runcpu during the 621.wrf\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

Environment variables set by runcpu during the 627.cam4\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

Environment variables set by runcpu during the 628.pop2\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

Environment variables set by runcpu during the 638.imagick\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

Environment variables set by runcpu during the 644.nab\_s peak run:

GOMP\_CPU\_AFFINITY = "0 32 1 33 2 34 3 35 4 36 5 37 6 38 7 39 8 40 9 41 10 42  
11 43 12 44 13 45 14 46 15 47 16 48 17 49 18 50 19 51 20 52 21 53 22 54  
23 55 24 56 25 57 26 58 27 59 28 60 29 61 30 62 31 63"

Environment variables set by runcpu during the 649.fotonik3d\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"

Environment variables set by runcpu during the 654.roms\_s peak run:

GOMP\_CPU\_AFFINITY = "0-63"



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## 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 -flt0 jemalloc 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 1  
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  
Memory Interleaving set to Disabled  
Logical Processor disabled

Sysinfo program /root/cpu2017-1.1.0/bin/sysinfo  
Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011  
running on linux-g3ob Thu Dec 5 14:24:39 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 7532 32-Core Processor  
2 "physical id"s (chips)  
64 "processors"  
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Date: Dec-2019

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2019

Tested by: Dell Inc.

Software Availability: Aug-2019

## Platform Notes (Continued)

```

cpu cores : 32
siblings  : 32
physical 0: cores 0 1 4 5 8 9 12 13 16 17 20 21 24 25 28 29 32 33 36 37 40 41 44 45
48 49 52 53 56 57 60 61
physical 1: cores 0 1 4 5 8 9 12 13 16 17 20 21 24 25 28 29 32 33 36 37 40 41 44 45
48 49 52 53 56 57 60 61

```

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):                 64
On-line CPU(s) list:   0-63
Thread(s) per core:    1
Core(s) per socket:    32
Socket(s):              2
NUMA node(s):          32
Vendor ID:              AuthenticAMD
CPU family:             23
Model:                  49
Model name:             AMD EPYC 7532 32-Core Processor
Stepping:               0
CPU MHz:                2395.633
BogoMIPS:               4791.26
Virtualization:        AMD-V
L1d cache:              32K
L1i cache:              32K
L2 cache:               512K
L3 cache:               16384K
NUMA node0 CPU(s):     0,1
NUMA node1 CPU(s):     2,3
NUMA node2 CPU(s):     4,5
NUMA node3 CPU(s):     6,7
NUMA node4 CPU(s):     8,9
NUMA node5 CPU(s):     10,11
NUMA node6 CPU(s):     12,13
NUMA node7 CPU(s):     14,15
NUMA node8 CPU(s):     16,17
NUMA node9 CPU(s):     18,19
NUMA node10 CPU(s):    20,21
NUMA node11 CPU(s):    22,23
NUMA node12 CPU(s):    24,25
NUMA node13 CPU(s):    26,27
NUMA node14 CPU(s):    28,29
NUMA node15 CPU(s):    30,31
NUMA node16 CPU(s):    32,33

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Platform Notes (Continued)

```

NUMA node17 CPU(s): 34,35
NUMA node18 CPU(s): 36,37
NUMA node19 CPU(s): 38,39
NUMA node20 CPU(s): 40,41
NUMA node21 CPU(s): 42,43
NUMA node22 CPU(s): 44,45
NUMA node23 CPU(s): 46,47
NUMA node24 CPU(s): 48,49
NUMA node25 CPU(s): 50,51
NUMA node26 CPU(s): 52,53
NUMA node27 CPU(s): 54,55
NUMA node28 CPU(s): 56,57
NUMA node29 CPU(s): 58,59
NUMA node30 CPU(s): 60,61
NUMA node31 CPU(s): 62,63

```

```

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 xtopology nonstop_tsc cpuid extd_apicid aperfmperf pri
pclmulqdq monitor ssse3 fma cx16 sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx
f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse
3dnowprefetch osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext
perfctr_l2 mwaitx cpb cat_l3 cdp_l3 hw_pstate sme ssbd sev ibrs ibpb stibp vmmcall
fsgsbase bmi1 avx2 smep bmi2 cqm rdt_a rdseed adx smap clflushopt clwb sha_ni
xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
clzero irperf xsaveerptr arat npt lbrv svm_lock nrip_save tsc_scale vmcb_clean
flushbyasid decodeassists pausefilter pfthreshold avic v_vmsave_vmload vgif umip
rdpid 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: 32 nodes (0-31)
node 0 cpus: 0 1
node 0 size: 15519 MB
node 0 free: 15449 MB
node 1 cpus: 2 3
node 1 size: 16127 MB
node 1 free: 16110 MB
node 2 cpus: 4 5
node 2 size: 16127 MB
node 2 free: 16099 MB
node 3 cpus: 6 7
node 3 size: 16126 MB
node 3 free: 16107 MB
node 4 cpus: 8 9

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Platform Notes (Continued)

```
node 4 size: 16127 MB
node 4 free: 16088 MB
node 5 cpus: 10 11
node 5 size: 16127 MB
node 5 free: 16111 MB
node 6 cpus: 12 13
node 6 size: 16127 MB
node 6 free: 16107 MB
node 7 cpus: 14 15
node 7 size: 16126 MB
node 7 free: 16111 MB
node 8 cpus: 16 17
node 8 size: 16127 MB
node 8 free: 16114 MB
node 9 cpus: 18 19
node 9 size: 16127 MB
node 9 free: 16115 MB
node 10 cpus: 20 21
node 10 size: 16127 MB
node 10 free: 16111 MB
node 11 cpus: 22 23
node 11 size: 16126 MB
node 11 free: 16115 MB
node 12 cpus: 24 25
node 12 size: 16127 MB
node 12 free: 16086 MB
node 13 cpus: 26 27
node 13 size: 16127 MB
node 13 free: 16115 MB
node 14 cpus: 28 29
node 14 size: 16127 MB
node 14 free: 16113 MB
node 15 cpus: 30 31
node 15 size: 16114 MB
node 15 free: 16099 MB
node 16 cpus: 32 33
node 16 size: 16127 MB
node 16 free: 16103 MB
node 17 cpus: 34 35
node 17 size: 16127 MB
node 17 free: 16111 MB
node 18 cpus: 36 37
node 18 size: 16127 MB
node 18 free: 16115 MB
node 19 cpus: 38 39
node 19 size: 16126 MB
node 19 free: 16105 MB
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Platform Notes (Continued)

```

node 20 cpus: 40 41
node 20 size: 16127 MB
node 20 free: 16035 MB
node 21 cpus: 42 43
node 21 size: 16127 MB
node 21 free: 16056 MB
node 22 cpus: 44 45
node 22 size: 16127 MB
node 22 free: 16075 MB
node 23 cpus: 46 47
node 23 size: 16126 MB
node 23 free: 16061 MB
node 24 cpus: 48 49
node 24 size: 16127 MB
node 24 free: 16005 MB
node 25 cpus: 50 51
node 25 size: 16127 MB
node 25 free: 16114 MB
node 26 cpus: 52 53
node 26 size: 16127 MB
node 26 free: 16111 MB
node 27 cpus: 54 55
node 27 size: 16126 MB
node 27 free: 16111 MB
node 28 cpus: 56 57
node 28 size: 16127 MB
node 28 free: 16114 MB
node 29 cpus: 58 59
node 29 size: 16127 MB
node 29 free: 16115 MB
node 30 cpus: 60 61
node 30 size: 16127 MB
node 30 free: 16114 MB
node 31 cpus: 62 63
node 31 size: 16125 MB
node 31 free: 16112 MB
node distances:
node  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
  0: 10 11 11 11 12 12 12 12 12 12 12 12 12 12 12 12 32 32 32 32
 32 32 32 32 32 32 32 32 32 32 32 32 32
  1: 11 10 11 11 12 12 12 12 12 12 12 12 12 12 12 12 32 32 32 32
 32 32 32 32 32 32 32 32 32 32 32
  2: 11 11 10 11 12 12 12 12 12 12 12 12 12 12 12 12 32 32 32 32
 32 32 32 32 32 32 32 32 32 32 32
  3: 11 11 11 10 12 12 12 12 12 12 12 12 12 12 12 12 32 32 32 32
 32 32 32 32 32 32 32 32 32 32 32

```

(Continued on next page)





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Platform Notes (Continued)

4:	12	12	12	12	10	11	11	11	12	12	12	12	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
5:	12	12	12	12	11	10	11	11	12	12	12	12	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
6:	12	12	12	12	11	11	10	11	12	12	12	12	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
7:	12	12	12	12	11	11	11	10	12	12	12	12	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
8:	12	12	12	12	12	12	12	12	10	11	11	11	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
9:	12	12	12	12	12	12	12	12	11	10	11	11	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
10:	12	12	12	12	12	12	12	12	11	11	10	11	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
11:	12	12	12	12	12	12	12	12	11	11	11	10	12	12	12	32	32	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
12:	12	12	12	12	12	12	12	12	12	12	12	12	12	10	11	11	11	32	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
13:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	10	11	11	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
14:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	11	10	11	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
15:	12	12	12	12	12	12	12	12	12	12	12	12	12	12	11	11	11	10	32
32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32				
16:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	10	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
17:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	11	10
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
18:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
19:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12				
20:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12
10	11	11	11	12	12	12	12	12	12	12	12	12	12	12	12				
21:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12
11	10	11	11	12	12	12	12	12	12	12	12	12	12	12	12				
22:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12
11	11	10	11	12	12	12	12	12	12	12	12	12	12	12	12				
23:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12
11	11	11	10	12	12	12	12	12	12	12	12	12	12	12	12				
24:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12
12	12	12	12	10	11	11	11	12	12	12	12	12	12	12	12				
25:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12
12	12	12	12	11	10	11	11	12	12	12	12	12	12	12	12				
26:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12
12	12	12	12	11	11	10	11	12	12	12	12	12	12	12	12				
27:	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	12	12

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

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

Test Date: Dec-2019  
Hardware Availability: Feb-2019  
Software Availability: Aug-2019

## Platform Notes (Continued)

```

12 12 12 12 11 11 11 10 12 12 12 12
28: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 12 12 12 12
12 12 12 12 12 12 12 12 10 11 11 11
29: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 12 12 12 12
12 12 12 12 12 12 12 12 11 10 11 11
30: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 12 12 12 12
12 12 12 12 12 12 12 12 11 11 10 11
31: 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 32 12 12 12 12
12 12 12 12 12 12 12 12 11 11 11 10

```

```

From /proc/meminfo
MemTotal:      527820844 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

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: disabled, RSB
filling

```

run-level 3 Dec 5 09:56

```

SPEC is set to: /root/cpu2017-1.1.0
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda2       xfs       440G      41G  400G  10% /

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Platform Notes (Continued)

```

From /sys/devices/virtual/dmi/id
  BIOS:      Dell Inc. 1.2.4 11/05/2019
  Vendor:    Dell Inc.
  Product:   PowerEdge R6525
  Product Family: PowerEdge
  Serial:    1234567

```

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.

```

Memory:
  5x 802C80B3802C 36ASF4G72PZ-3G2E2 32 GB 2 rank 3200
  2x 802C8632802C 36ASF4G72PZ-3G2E2 32 GB 2 rank 3200
  1x 802C869D802C 36ASF4G72PZ-3G2E2 32 GB 2 rank 3200
  8x 80AD863280AD HMA84GR7CJR4N-XN 32 GB 2 rank 3200
  16x Not Specified Not Specified

```

(End of data from sysinfo program)

## Compiler Version Notes

```

=====
C | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
  | 644.nab_s(base, peak)
-----

```

```

AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCCLLVM.2.0.0-Build#191) (based on LLVM AOCCLLVM.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
-----

```

```

=====
C++, C, Fortran | 607.cactuBSSN_s(base, peak)
-----

```

```

AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCCLLVM.2.0.0-Build#191) (based on LLVM AOCCLLVM.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
AOCCLLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
  AOCCLLVM.2.0.0-Build#191) (based on LLVM AOCCLLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Date: Dec-2019

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2019

Tested by: Dell Inc.

Software Availability: Aug-2019

## Compiler Version Notes (Continued)

```

InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin
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

```

```

=====
Fortran          | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
                  | 654.roms_s(base, peak)

```

```

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

```

```

=====
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
  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
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

```

## Base Compiler Invocation

C benchmarks:

clang

Fortran benchmarks:

flang

Benchmarks using both Fortran and C:

flang clang

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:

clang++ clang flang

## Base Portability Flags

```

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_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

```

## 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

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

```
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
-march=znver2 -fstruct-layout=3 -mllvm -unroll-threshold=50
-freemap-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 -freemap-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-unswitch-threshold=200000
-mllvm -unroll-threshold=100 -mllvm -enable-partial-unswitch
-funroll-loops -Mrecursive -z muldefs -Kieee -fno-finite-math-only
-DSPEC_OPENMP -fopenmp -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread
-ldl -lmvec -lamdlibm -ljemalloc -lflang
```

## 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



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## 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:

```
-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=znver2
-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 -DSPEC_OPENMP -fopenmp -DUSE_OPENMP
-lmvec -lamdlibm -fopenmp=libomp -lomp -lpthread -ldl -ljemalloc
-lflang
```

Fortran benchmarks:

```
603.bwaves_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
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Date: Dec-2019

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2019

Tested by: Dell Inc.

Software Availability: Aug-2019

## Peak Optimization Flags (Continued)

649.fotonik3d\_s: Same as 603.bwaves\_s

```
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
```

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 -Ofast -march=znver2
-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 -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 -Ofast -march=znver2
-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 -mllvm -unroll-threshold=100
-mllvm -enable-partial-unswitch -mllvm -loop-unswitch-threshold=200000
-O3 -funroll-loops -Mrecursive -Kieee -fno-finite-math-only
-DSPEC_OPENMP -fopenmp -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread
-ldl -lmvec -lamdlibm -ljemalloc -lflang
```





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_fp\_base = 153

PowerEdge R6525 (AMD EPYC 7532, 2.40 GHz)

SPECspeed®2017\_fp\_peak = 146

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2019

Hardware Availability: Feb-2019

Software Availability: Aug-2019

## 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

<http://www.spec.org/cpu2017/flags/aocc200-flags-B1-speed-Dell.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE7.html>

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

<http://www.spec.org/cpu2017/flags/aocc200-flags-B1-speed-Dell.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE7.xml>

SPEC CPU and SPECspeed are registered trademarks 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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.0 on 2019-12-05 15:24:38-0500.

Report generated on 2019-12-26 11:33:20 by CPU2017 PDF formatter v6255.

Originally published on 2019-12-24.