SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.
(Test Sponsor: Dell Inc)

$SPECspeed®2017\_fp\_base = 142$

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

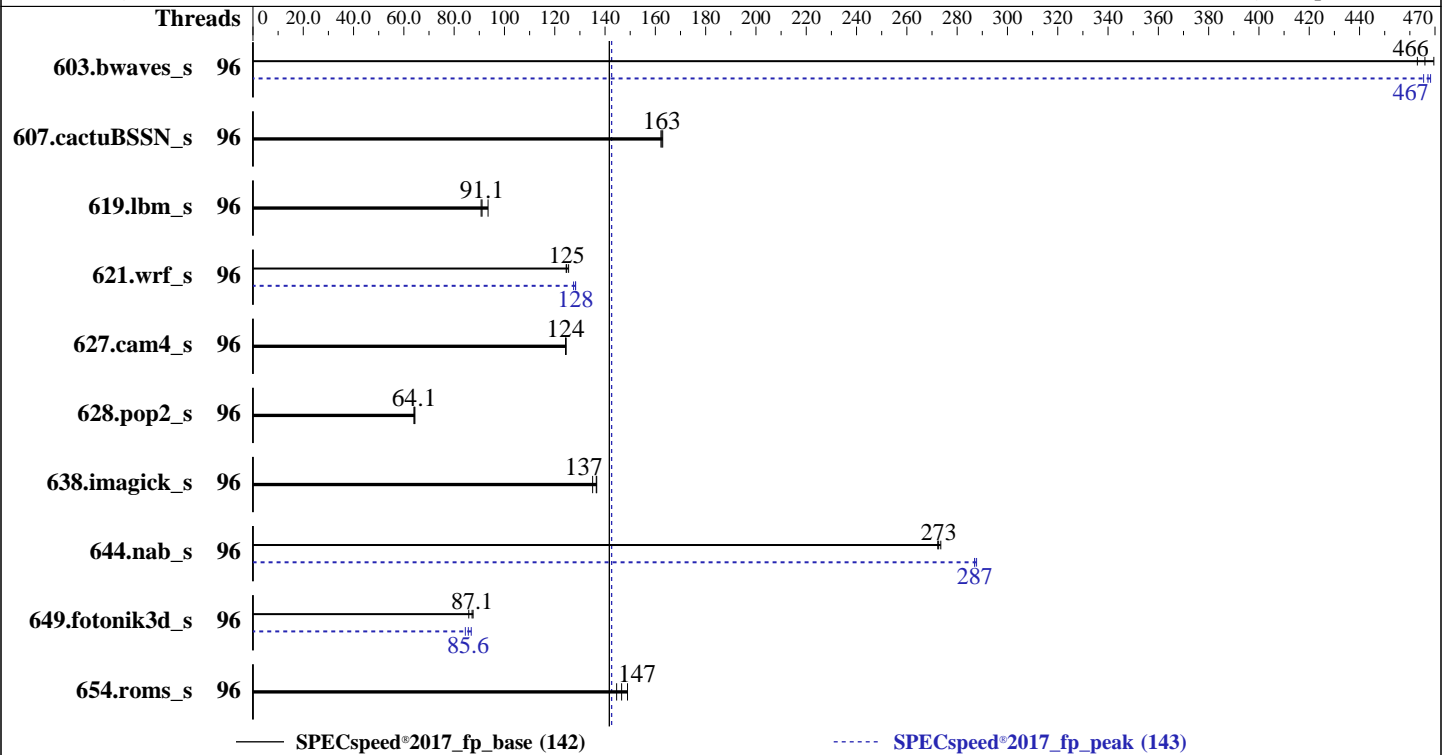$SPECspeed®2017\_fp\_peak = 143$

CPU2017 License: 55

Test Sponsor: Dell Inc

Tested by: Dell Inc.

Test Date: Jun-2020

Hardware Availability: Apr-2020

Software Availability: Apr-2020

Threads — scale: 0 20.0 40.0 60.0 80.0 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 470

Benchmark	Threads	base	peak
603.bwaves_s	96	466	467
607.cactuBSSN_s	96	163	
619.lbm_s	96	91.1	
621.wrf_s	96	125	128
627.cam4_s	96	124	
628.pop2_s	96	64.1	
638.imagick_s	96	137	
644.nab_s	96	273	287
649.fotonik3d_s	96	87.1	85.6
654.roms_s	96	147	

— SPECspeed®2017_fp_base (142)   ----- SPECspeed®2017_fp_peak (143)

Hardware

CPU Name: Intel Xeon Gold 6240R

Max MHz: 4000

Nominal: 2400

Enabled: 48 cores, 2 chips, 2 threads/core

Orderable: 1,2 chips

Cache L1: 32 KB I + 32 KB D on chip per core

L2: 1 MB I+D on chip per core

L3: 35.75 MB I+D on chip per chip

Other: None

Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R)

Storage: 1 x 480 GB SATA SSD

Other: None

Software

OS: Red Hat Enterprise Linux 8.1

kernel 4.18.0-147.el8.x86_64

Compiler: C/C++: Version 19.1.1.217 of Intel C/C++ Compiler for Linux;

Fortran: Version 19.1.1.217 of Intel Fortran Compiler for Linux

Parallel: Yes

Firmware: Version 2.7.1 released Feb-2020

File System: tmpfs

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: 64-bit

Other: jemalloc memory allocator V5.0.1

Power Management: BIOS set to prefer performance at the cost of additional power usage.

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.
(Test Sponsor: Dell Inc)

SPECspeed®2017_fp_base = 142

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

SPECspeed®2017_fp_peak = 143

CPU2017 License: 55	**Test Date:** Jun-2020
Test Sponsor: Dell Inc	**Hardware Availability:** Apr-2020
Tested by: Dell Inc.	**Software Availability:** Apr-2020

Results Table

Benchmark	Base						Peak					
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	96	126	470	127	463	**127**	**466**	96	**126**	**467**	126	468	127	465
607.cactuBSSN_s	96	**103**	**163**	102	163	103	162	96	**103**	**163**	102	163	103	162
619.lbm_s	96	56.0	93.5	57.7	90.7	**57.5**	**91.1**	96	56.0	93.5	57.7	90.7	**57.5**	**91.1**
621.wrf_s	96	106	125	**106**	**125**	105	126	96	103	128	**103**	**128**	104	127
627.cam4_s	96	**71.3**	**124**	71.2	125	71.3	124	96	**71.3**	**124**	71.2	125	71.3	124
628.pop2_s	96	185	64.1	**185**	**64.1**	184	64.4	96	185	64.1	**185**	**64.1**	184	64.4
638.imagick_s	96	107	135	**106**	**137**	106	137	96	107	135	**106**	**137**	106	137
644.nab_s	96	63.9	274	**64.1**	**273**	64.2	272	96	**60.9**	**287**	60.9	287	60.7	288
649.fotonik3d_s	96	106	85.8	104	87.5	**105**	**87.1**	96	108	84.4	**106**	**85.6**	105	86.8
654.roms_s	96	**107**	**147**	106	149	109	145	96	**107**	**147**	106	149	109	145
SPECspeed®2017_fp_base =	**142**											
SPECspeed®2017_fp_peak =	**143**											

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

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH =
    "/dev/shm/cpu2017-ic19.1u1/lib/intel64:/dev/shm/cpu2017-ic19.1u1/je5.0.1
    -64"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Redhat Enterprise Linux 8.0
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)

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.
(Test Sponsor: Dell Inc)

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

$SPECspeed®2017\_fp\_base = 142$

$SPECspeed®2017\_fp\_peak = 143$

CPU2017 License: 55   **Test Date:** Jun-2020
Test Sponsor: Dell Inc   **Hardware Availability:** Apr-2020
Tested by: Dell Inc.   **Software Availability:** Apr-2020

General Notes (Continued)

```
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.
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3>        /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS settings:
Sub NUMA Cluster enabled
Virtualization Technology disabled
System Profile set to Custom
CPU Performance set to Maximum Performance
C States set to Autonomous
C1E disabled
Uncore Frequency set to Dynamic
Energy Efficiency Policy set to Performance
Memory Patrol Scrub set to standard
Logical Processor enabled
CPU Interconnect Bus Link Power Management disabled
PCI ASPM L1 Link Power Management disabled
UPI Prefetch enabled
LLC Prefetch disabled
Dead Line LLC Alloc enabled
Directory AtoS disabled

Sysinfo program /dev/shm/cpu2017-ic19.1u1/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
running on localhost.localdomain Fri Jun 12 21:30:40 2020

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 : Intel(R) Xeon(R) Gold 6240R CPU @ 2.40GHz
      2  "physical id"s (chips)
      96 "processors"
   cores, siblings (Caution: counting these is hw and system dependent. The following
```

Dell Inc.
(Test Sponsor: Dell Inc)

$SPECspeed®2017\_fp\_base = 142$

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

$SPECspeed®2017\_fp\_peak = 143$

CPU2017 License: 55

Test Sponsor: Dell Inc

Tested by: Dell Inc.

Test Date: Jun-2020

Hardware Availability: Apr-2020

Software Availability: Apr-2020

Platform Notes (Continued)

```
    excerpts from /proc/cpuinfo might not be reliable.  Use with caution.)
      cpu cores : 24
      siblings  : 48
      physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 25 26 27 28 29
      physical 1: cores 0 1 2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

  From lscpu:
      Architecture:        x86_64
      CPU op-mode(s):      32-bit, 64-bit
      Byte Order:          Little Endian
      CPU(s):              96
      On-line CPU(s) list: 0-95
      Thread(s) per core:  2
      Core(s) per socket:  24
      Socket(s):           2
      NUMA node(s):        2
      Vendor ID:           GenuineIntel
      CPU family:          6
      Model:               85
      Model name:          Intel(R) Xeon(R) Gold 6240R CPU @ 2.40GHz
      Stepping:            7
      CPU MHz:             3172.359
      CPU max MHz:         4000.0000
      CPU min MHz:         1000.0000
      BogoMIPS:            4800.00
      Virtualization:      VT-x
      L1d cache:           32K
      L1i cache:           32K
      L2 cache:            1024K
      L3 cache:            36608K
      NUMA node0 CPU(s):
      0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58
      ,60,62,64,66,68,70,72,74,76,78,80,82,84,86,88,90,92,94
      NUMA node1 CPU(s):
      1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55,57,59
      ,61,63,65,67,69,71,73,75,77,79,81,83,85,87,89,91,93,95
      Flags:               fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
      pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
      lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
      aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
      xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
      avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3
      invpcid_single intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi
      flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm
      cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd
      avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
      cqm_mbm_local dtherm ida arat pln pts pku ospke avx512_vnni md_clear flush_l1d
```

(Continued on next page)

Dell Inc.
(Test Sponsor: Dell Inc)

SPECspeed®2017_fp_base = 142

SPECspeed®2017_fp_peak = 143

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

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

Test Date: Jun-2020
Hardware Availability: Apr-2020
Software Availability: Apr-2020

Platform Notes (Continued)

```
      arch_capabilities

  /proc/cpuinfo cache data
    cache size : 36608 KB

  From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
  physical chip.
    available: 2 nodes (0-1)
    node 0 cpus: 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
    52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94
    node 0 size: 385602 MB
    node 0 free: 378677 MB
    node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51
    53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95
    node 1 size: 387036 MB
    node 1 free: 376369 MB
    node distances:
    node   0   1
      0:  10  21
      1:  21  10

  From /proc/meminfo
    MemTotal:       791182224 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

  From /etc/*release* /etc/*version*
    os-release:
      NAME="Red Hat Enterprise Linux"
      VERSION="8.1 (Ootpa)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="8.1"
      PLATFORM_ID="platform:el8"
      PRETTY_NAME="Red Hat Enterprise Linux 8.1 (Ootpa)"
      ANSI_COLOR="0;31"
    redhat-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
    system-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
    system-release-cpe: cpe:/o:redhat:enterprise_linux:8.1:ga

  uname -a:
    Linux localhost.localdomain 4.18.0-147.el8.x86_64 #1 SMP Thu Sep 26 15:52:44 UTC 2019
    x86_64 x86_64 x86_64 GNU/Linux

  Kernel self-reported vulnerability status:

  CVE-2018-3620 (L1 Terminal Fault):        Not affected
```

(Continued on next page)

Dell Inc.
(Test Sponsor: Dell Inc)

$SPECspeed^{®}2017\_fp\_base = 142$

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

$SPECspeed^{®}2017\_fp\_peak = 143$

CPU2017 License: 55		**Test Date:**	Jun-2020
Test Sponsor: Dell Inc		**Hardware Availability:** Apr-2020
Tested by: Dell Inc.		**Software Availability:** Apr-2020

Platform Notes (Continued)

```
 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: usercopy/swapgs barriers and __user
                                           pointer sanitization
 CVE-2017-5715 (Spectre variant 2):        Mitigation: Enhanced IBRS, IBPB: conditional,
                                           RSB filling


 run-level 3 Jun 12 10:49


 SPEC is set to: /dev/shm/cpu2017-ic19.1u1
    Filesystem      Type   Size  Used Avail Use% Mounted on
    tmpfs           tmpfs  378G   11G  368G   3% /dev/shm


 From /sys/devices/virtual/dmi/id
    BIOS:    Dell Inc. 2.7.1 02/14/2020
    Vendor:  Dell Inc.
    Product: PowerEdge MX740c
    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:
      21x 00AD00B300AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933
      1x 00AD063200AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933
      2x 00AD069D00AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933


 (End of data from sysinfo program)
 The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler.
 The correct version of C/C++ compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux
 The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux
```

Compiler Version Notes

```
==============================================================================
C                  | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
                   | 644.nab_s(base, peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

(Continued on next page)

Dell Inc.
(Test Sponsor: Dell Inc)

$SPECspeed^{®}2017\_fp\_base = 142$

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

$SPECspeed^{®}2017\_fp\_peak = 143$

CPU2017 License:	55	**Test Date:**	Jun-2020
Test Sponsor:	Dell Inc	**Hardware Availability:**	Apr-2020
Tested by:	Dell Inc.	**Software Availability:**	Apr-2020

Compiler Version Notes (Continued)

```
==============================================================================
C++, C, Fortran | 607.cactuBSSN_s(base, peak)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran         | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
                | 654.roms_s(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------


==============================================================================
Fortran, C      | 621.wrf_s(base, peak) 627.cam4_s(base, peak)
                | 628.pop2_s(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
  64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
  Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation.  All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icc

(Continued on next page)

Dell Inc.
(Test Sponsor: Dell Inc)

$SPECspeed^{®}2017\_fp\_base = 142$

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

$SPECspeed^{®}2017\_fp\_peak = 143$

CPU2017 License: 55		**Test Date:**	Jun-2020
Test Sponsor:	Dell Inc	**Hardware Availability:**	Apr-2020
Tested by:	Dell Inc.	**Software Availability:**	Apr-2020

Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:
`icpc icc ifort`

Base Portability Flags

603.bwaves_s: `-DSPEC_LP64`
607.cactuBSSN_s: `-DSPEC_LP64`
619.lbm_s: `-DSPEC_LP64`
621.wrf_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
627.cam4_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG`
628.pop2_s: `-DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian`
`-assume byterecl`
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:
`-m64 -std=c11 -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch`
`-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP`
`-mbranches-within-32B-boundaries`

Fortran benchmarks:
`-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div`
`-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp`
`-nostandard-realloc-lhs -mbranches-within-32B-boundaries`
`-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Benchmarks using both Fortran and C:
`-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div`
`-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp`
`-DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs`
`-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Benchmarks using Fortran, C, and C++:
`-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div`
`-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp`
`-DSPEC_OPENMP -mbranches-within-32B-boundaries -nostandard-realloc-lhs`

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.
(Test Sponsor: Dell Inc)

$\text{SPECspeed}^{®}2017\_fp\_base = 142$

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

$\text{SPECspeed}^{®}2017\_fp\_peak = 143$

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):
```
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Peak Compiler Invocation

C benchmarks:
```
icc
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
ifort icc
```

Benchmarks using Fortran, C, and C++:
```
icpc icc ifort
```

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: `-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP -mbranches-within-32B-boundaries -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Fortran benchmarks:

603.bwaves_s: `-m64 -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -DSPEC_SUPPRESS_OPENMP -DSPEC_OPENMP -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only`

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

Dell Inc.
(Test Sponsor: Dell Inc)

$SPECspeed^{®}2017\_fp\_base = 142$

PowerEdge MX740c (Intel Xeon Gold 6240R, 2.40 GHz)

$SPECspeed^{®}2017\_fp\_peak = 143$

CPU2017 License: 55

Test Sponsor: Dell Inc

Tested by: Dell Inc.

Test Date: Jun-2020

Hardware Availability: Apr-2020

Software Availability: Apr-2020

Peak Optimization Flags (Continued)

603.bwaves_s (continued):
```
-qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs
-mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

649.fotonik3d_s: Same as 603.bwaves_s

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: -m64 -std=c11 -Wl,-z,muldefs -prof-gen(pass 1)
```
-prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-mbranches-within-32B-boundaries -nostandard-realloc-lhs
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

627.cam4_s: basepeak = yes

628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.html
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE12.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revA.xml
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE12.xml

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

Tested with SPEC CPU®2017 v1.1.0 on 2020-06-12 21:30:39-0400.
Report generated on 2020-09-29 15:21:40 by CPU2017 PDF formatter v6255.
Originally published on 2020-09-29.