



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

CPU2017 License: 55

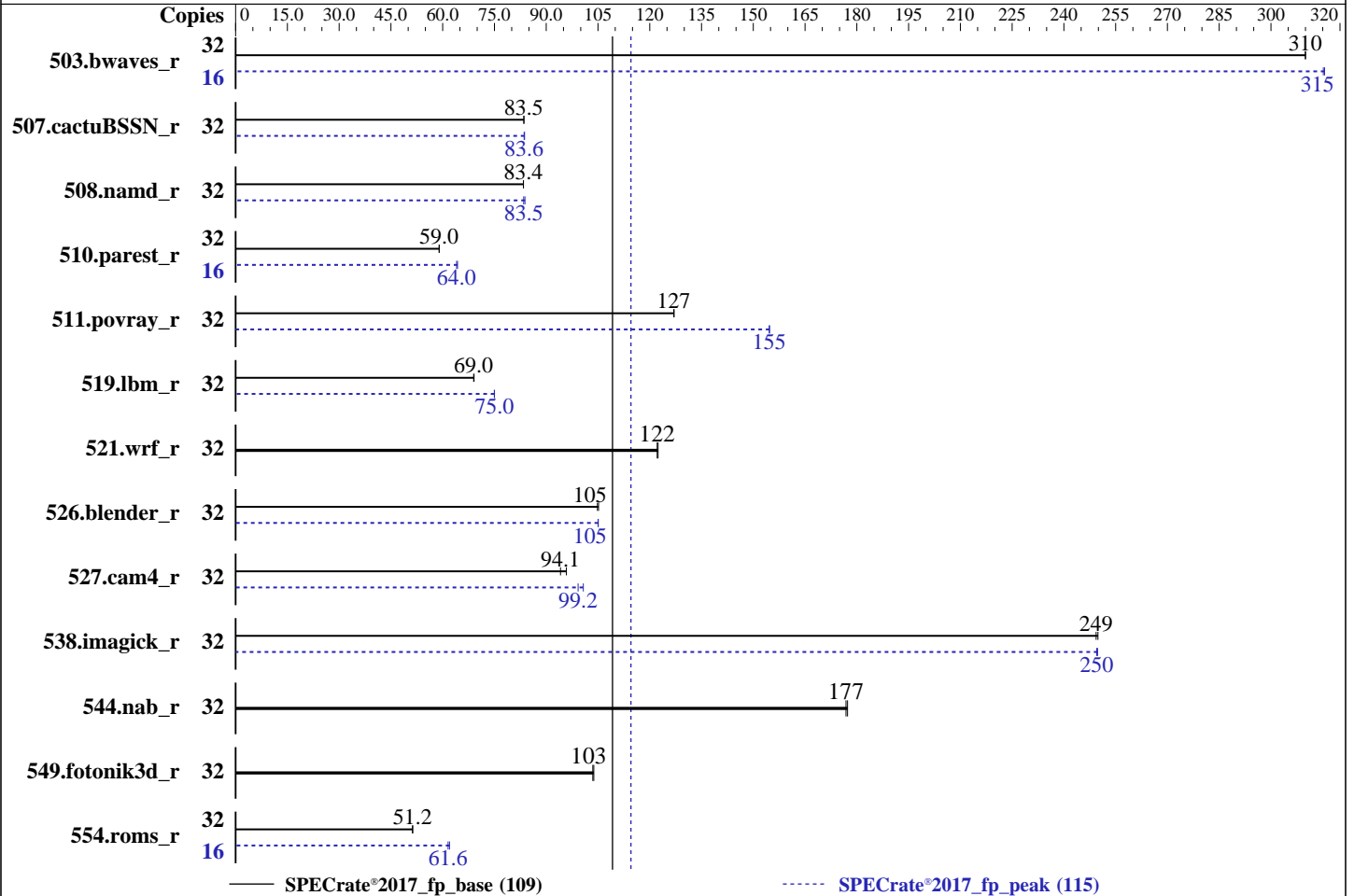
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Jan-2020

Hardware Availability: Feb-2020

Software Availability: Jun-2019



### Hardware

CPU Name: Intel Xeon Silver 4215R  
 Max MHz: 4000  
 Nominal: 3200  
 Enabled: 16 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: 11 MB I+D on chip per chip  
 Other: None  
 Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2933V-R, running at 2400)  
 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++: Version 19.0.4.227 of Intel C/C++ Compiler Build 20190416 for Linux;  
 Fortran: Version 19.0.4.227 of Intel Fortran Compiler Build 20190416 for Linux  
 Parallel: No  
 Firmware: Version 2.5.4 released Jan-2020  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 Other: None  
 Power Management: BIOS set to prefer performance at the cost of additional power usage.



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

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

Test Date: Jan-2020  
Hardware Availability: Feb-2020  
Software Availability: Jun-2019

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	32	1035	310	<b><u>1035</u></b>	<b><u>310</u></b>			16	508	316	<b><u>509</u></b>	<b><u>315</u></b>		
507.cactuBSSN_r	32	<b><u>485</u></b>	<b><u>83.5</u></b>	485	83.5			32	484	83.7	<b><u>485</u></b>	<b><u>83.6</u></b>		
508.namd_r	32	364	83.4	<b><u>365</u></b>	<b><u>83.4</u></b>			32	363	83.8	<b><u>364</u></b>	<b><u>83.5</u></b>		
510.parest_r	32	1419	59.0	<b><u>1420</u></b>	<b><u>59.0</u></b>			16	651	64.3	<b><u>654</u></b>	<b><u>64.0</u></b>		
511.povray_r	32	<b><u>589</u></b>	<b><u>127</u></b>	588	127			32	483	155	<b><u>483</u></b>	<b><u>155</u></b>		
519.lbm_r	32	<b><u>489</u></b>	<b><u>69.0</u></b>	488	69.1			32	<b><u>450</u></b>	<b><u>75.0</u></b>	450	75.0		
521.wrf_r	32	586	122	<b><u>587</u></b>	<b><u>122</u></b>			32	586	122	<b><u>587</u></b>	<b><u>122</u></b>		
526.blender_r	32	<b><u>465</u></b>	<b><u>105</u></b>	463	105			32	464	105	<b><u>464</u></b>	<b><u>105</u></b>		
527.cam4_r	32	584	95.8	<b><u>595</u></b>	<b><u>94.1</u></b>			32	556	101	<b><u>564</u></b>	<b><u>99.2</u></b>		
538.imagick_r	32	319	250	<b><u>319</u></b>	<b><u>249</u></b>			32	319	250	<b><u>319</u></b>	<b><u>250</u></b>		
544.nab_r	32	<b><u>305</u></b>	<b><u>177</u></b>	304	177			32	<b><u>305</u></b>	<b><u>177</u></b>	304	177		
549.fotonik3d_r	32	1202	104	<b><u>1205</u></b>	<b><u>103</u></b>			32	1202	104	<b><u>1205</u></b>	<b><u>103</u></b>		
554.roms_r	32	<b><u>992</u></b>	<b><u>51.2</u></b>	991	51.3			16	<b><u>413</u></b>	<b><u>61.6</u></b>	410	62.0		

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

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:  
LD\_LIBRARY\_PATH = "/home/cpu2017/lib/intel64"

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5  
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.

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Jan-2020

**Hardware Availability:** Feb-2020

**Software Availability:** Jun-2019

## General Notes (Continued)

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>
```

## 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 /home/cpu2017/bin/sysinfo

Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011

running on linux-g3ob Thu Jan 30 10:49:33 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) Silver 4215R CPU @ 3.20GHz
```

```
2 "physical id"s (chips)
```

```
32 "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 : 8
```

```
siblings : 16
```

```
physical 0: cores 0 1 2 3 4 5 6 7
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

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

**Test Date:** Jan-2020  
**Hardware Availability:** Feb-2020  
**Software Availability:** Jun-2019

### Platform Notes (Continued)

physical 1: cores 0 1 2 3 4 5 6 7

From lscpu:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:             Little Endian
Address sizes:          46 bits physical, 48 bits virtual
CPU(s):                 32
On-line CPU(s) list:   0-31
Thread(s) per core:    2
Core(s) per socket:    8
Socket(s):              2
NUMA node(s):          2
Vendor ID:              GenuineIntel
CPU family:             6
Model:                  85
Model name:             Intel(R) Xeon(R) Silver 4215R CPU @ 3.20GHz
Stepping:               7
CPU MHz:                3200.000
BogoMIPS:               6400.00
Virtualization:        VT-x
L1d cache:              32K
L1i cache:              32K
L2 cache:               1024K
L3 cache:               11264K
NUMA node0 CPU(s):     0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30
NUMA node1 CPU(s):     1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31
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
aperfmpperf 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
arch_capabilities

```

/proc/cpuinfo cache data  
cache size : 11264 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

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Dell Inc.

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

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

**Test Date:** Jan-2020  
**Hardware Availability:** Feb-2020  
**Software Availability:** Jun-2019

### Platform Notes (Continued)

```
node 0 size: 192045 MB
node 0 free: 191179 MB
node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
node 1 size: 193532 MB
node 1 free: 192730 MB
node distances:
node 0 1
0: 10 21
1: 21 10
```

```
From /proc/meminfo
MemTotal: 394831216 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: Enhanced IBRS, IBPB: conditional,
RSB filling
```

```
run-level 3 Jan 30 05:07 last=5
```

```
SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 440G 48G 393G 11% /
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

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

**Test Date:** Jan-2020  
**Hardware Availability:** Feb-2020  
**Software Availability:** Jun-2019

## Platform Notes (Continued)

```
From /sys/devices/virtual/dmi/id
  BIOS:    Dell Inc. 2.5.4 01/13/2020
  Vendor:  Dell Inc.
  Product: PowerEdge R740xd
  Product Family: PowerEdge
  Serial:  F5BLCS2
```

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:
  2x 002C069D002C 18ASF2G72PDZ-2G9E1 16 GB 2 rank 2933
  7x 00AD00B300AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933
  3x 00AD063200AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933
  12x 00AD069D00AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933
```

(End of data from sysinfo program)

## Compiler Version Notes

```
=====  
C          | 519.lbm_r(base, peak) 538.imagick_r(base, peak)  
          | 544.nab_r(base, peak)  
-----
```

```
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.  
-----
```

```
=====  
C++       | 508.namd_r(base, peak) 510.parest_r(base, peak)  
-----
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.  
-----
```

```
=====  
C++, C    | 511.povray_r(base, peak) 526.blender_r(base, peak)  
-----
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.  
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

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

**Test Date:** Jan-2020  
**Hardware Availability:** Feb-2020  
**Software Availability:** Jun-2019

## Compiler Version Notes (Continued)

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====  
C++, C, Fortran | 507.cactuBSSN\_r(base, peak)

-----  
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.4.227 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====  
Fortran | 503.bwaves\_r(base, peak) 549.fotonik3d\_r(base, peak)  
| 554.roms\_r(base, peak)

-----  
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.4.227 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====  
Fortran, C | 521.wrf\_r(base, peak) 527.cam4\_r(base, peak)

-----  
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.4.227 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:

icc -m64 -std=c11

C++ benchmarks:

icpc -m64

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Jan-2020

**Hardware Availability:** Feb-2020

**Software Availability:** Jun-2019

## Base Compiler Invocation (Continued)

Fortran benchmarks:

```
ifort -m64
```

Benchmarks using both Fortran and C:

```
ifort -m64 icc -m64 -std=c11
```

Benchmarks using both C and C++:

```
icpc -m64 icc -m64 -std=c11
```

Benchmarks using Fortran, C, and C++:

```
icpc -m64 icc -m64 -std=c11 ifort -m64
```

## Base Portability Flags

```
503.bwaves_r: -DSPEC_LP64
```

```
507.cactuBSSN_r: -DSPEC_LP64
```

```
508.namd_r: -DSPEC_LP64
```

```
510.parest_r: -DSPEC_LP64
```

```
511.povray_r: -DSPEC_LP64
```

```
519.lbm_r: -DSPEC_LP64
```

```
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
```

```
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
```

```
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
```

```
538.imagick_r: -DSPEC_LP64
```

```
544.nab_r: -DSPEC_LP64
```

```
549.fotonik3d_r: -DSPEC_LP64
```

```
554.roms_r: -DSPEC_LP64
```

## Base Optimization Flags

C benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=4
```

C++ benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=4
```

Fortran benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs  
-align array32byte
```

(Continued on next page)





# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Jan-2020

**Hardware Availability:** Feb-2020

**Software Availability:** Jun-2019

## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs
-align array32byte
```

Benchmarks using both C and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4
```

Benchmarks using Fortran, C, and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs
-align array32byte
```

## Peak Compiler Invocation

C benchmarks:

```
icc -m64 -std=c11
```

C++ benchmarks:

```
icpc -m64
```

Fortran benchmarks:

```
ifort -m64
```

Benchmarks using both Fortran and C:

```
ifort -m64 icc -m64 -std=c11
```

Benchmarks using both C and C++:

```
icpc -m64 icc -m64 -std=c11
```

Benchmarks using Fortran, C, and C++:

```
icpc -m64 icc -m64 -std=c11 ifort -m64
```

## Peak Portability Flags

Same as Base Portability Flags



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Jan-2020

**Hardware Availability:** Feb-2020

**Software Availability:** Jun-2019

## Peak Optimization Flags

C benchmarks:

519.lbm\_r: -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

538.imagick\_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-ffinite-math-only -qopt-mem-layout-trans=4

544.nab\_r: basepeak = yes

C++ benchmarks:

508.namd\_r: -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

510.parest\_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-ffinite-math-only -qopt-mem-layout-trans=4

Fortran benchmarks:

503.bwaves\_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-ffinite-math-only -qopt-mem-layout-trans=4 -auto  
-nostandard-realloc-lhs -align array32byte

549.fotonik3d\_r: basepeak = yes

554.roms\_r: -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 -auto -nostandard-realloc-lhs  
-align array32byte

Benchmarks using both Fortran and C:

521.wrf\_r: basepeak = yes

527.cam4\_r: -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 -auto -nostandard-realloc-lhs  
-align array32byte

Benchmarks using both C and C++:

511.povray\_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Silver 4215R, 3.20 GHz)

SPECrate®2017\_fp\_base = 109

SPECrate®2017\_fp\_peak = 115

**CPU2017 License:** 55

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Jan-2020

**Hardware Availability:** Feb-2020

**Software Availability:** Jun-2019

## Peak Optimization Flags (Continued)

511.povray\_r (continued):

-qopt-mem-layout-trans=4

526.blender\_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch

-ffinite-math-only -qopt-mem-layout-trans=4

Benchmarks using Fortran, C, and C++:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only

-qopt-mem-layout-trans=4 -auto -nostandard-realloc-lhs

-align array32byte

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-09.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE9.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0u1-official-linux64.2019-07-09.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-revE9.xml>

SPEC CPU and SPECrate 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 2020-01-30 11:49:33-0500.

Report generated on 2020-03-02 11:49:22 by CPU2017 PDF formatter v6255.

Originally published on 2020-02-29.