



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

CPU2017 License: 55

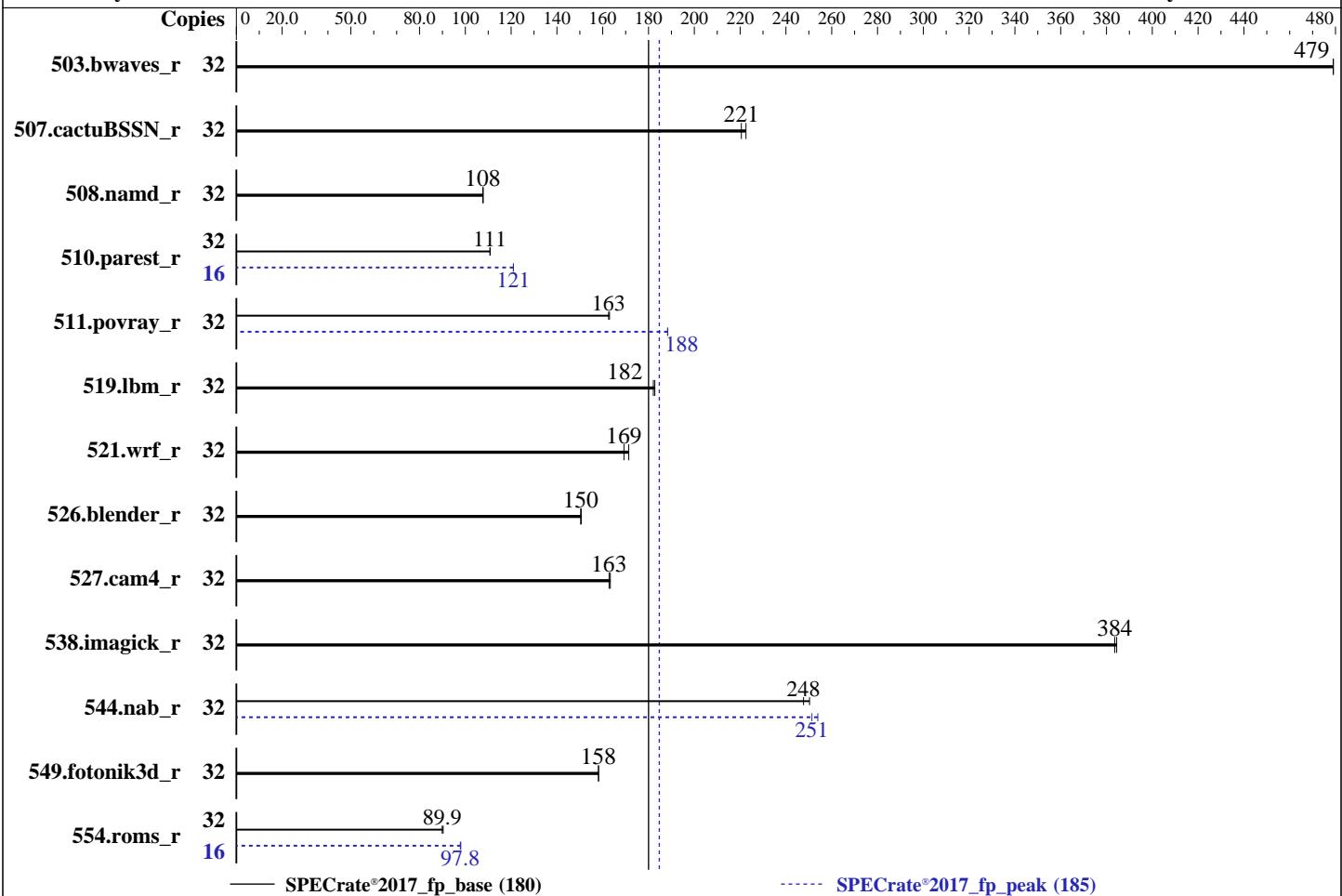
Test Date: May-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Dec-2020



## Hardware

CPU Name: Intel Xeon Gold 6334  
 Max MHz: 3700  
 Nominal: 3600  
 Enabled: 16 cores, 2 chips, 2 threads/core  
 Orderable: 1,2 chips  
 Cache L1: 32 KB I + 48 KB D on chip per core  
 L2: 1.25 MB I+D on chip per core  
 L3: 18 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx8 PC4-3200AA-R)  
 Storage: 125 GB on tmpfs  
 Other: None

OS:

Red Hat Enterprise Linux 8.3 (Ootpa)  
 4.18.0-240.el8.x86\_64

Compiler:  
 C/C++: Version 2021.1 of Intel oneAPI DPC++/C++  
 Compiler Build 20201113 for Linux;  
 Fortran: Version 2021.1 of Intel Fortran Compiler  
 Classic Build 20201112 for Linux;  
 C/C++: Version 2021.1 of Intel C/C++ Compiler  
 Classic Build 20201112 for Linux

Parallel:

No

Firmware:

Version 1.1.3 released Apr-2021

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 and OS set to prefer performance

at the cost of additional power usage.



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

CPU2017 License: 55

Test Date: May-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Dec-2020

## Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	32	670	479	<b><u>670</u></b>	<b><u>479</u></b>			32	670	479	<b><u>670</u></b>	<b><u>479</u></b>				
507.cactusBSSN_r	32	182	223	<b><u>184</u></b>	<b><u>221</u></b>			32	182	223	<b><u>184</u></b>	<b><u>221</u></b>				
508.namd_r	32	282	108	<b><u>283</u></b>	<b><u>108</u></b>			32	282	108	<b><u>283</u></b>	<b><u>108</u></b>				
510.parest_r	32	<b><u>756</u></b>	<b><u>111</u></b>	755	111			16	346	121	<b><u>346</u></b>	<b><u>121</u></b>				
511.povray_r	32	<b><u>460</u></b>	<b><u>163</u></b>	459	163			32	397	188	<b><u>397</u></b>	<b><u>188</u></b>				
519.lbm_r	32	<b><u>185</u></b>	<b><u>182</u></b>	185	183			32	<b><u>185</u></b>	<b><u>182</u></b>	185	183				
521.wrf_r	32	<b><u>423</u></b>	<b><u>169</u></b>	418	171			32	<b><u>423</u></b>	<b><u>169</u></b>	418	171				
526.blender_r	32	<b><u>324</u></b>	<b><u>150</u></b>	324	151			32	<b><u>324</u></b>	<b><u>150</u></b>	324	151				
527.cam4_r	32	<b><u>344</u></b>	<b><u>163</u></b>	343	163			32	<b><u>344</u></b>	<b><u>163</u></b>	343	163				
538.imagick_r	32	<b><u>207</u></b>	<b><u>384</u></b>	207	384			32	<b><u>207</u></b>	<b><u>384</u></b>	207	384				
544.nab_r	32	215	250	<b><u>217</u></b>	<b><u>248</u></b>			32	212	254	<b><u>214</u></b>	<b><u>251</u></b>				
549.fotonik3d_r	32	<b><u>789</u></b>	<b><u>158</u></b>	788	158			32	<b><u>789</u></b>	<b><u>158</u></b>	788	158				
554.roms_r	32	563	90.3	<b><u>566</u></b>	<b><u>89.9</u></b>			16	<b><u>260</u></b>	<b><u>97.8</u></b>	259	98.0				

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

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 =
    "/mnt/ramdisk/cpu2017-1.1.7-ic2021.1/lib/intel64:/mnt/ramdisk/cpu2017-1.
    1.7-ic2021.1/je5.0.1-64"
MALLOC_CONF = "retain:true"
```

## General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Red Hat Enterprise Linux 8.1

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 180

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

SPECrate®2017\_fp\_peak = 185

CPU2017 License: 55

Test Date: May-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Dec-2020

## General Notes (Continued)

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.

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>

Benchmark run from a 125 GB ramdisk created with the cmd: "mount -t tmpfs -o size=125G tmpfs /mnt/ramdisk"

## Platform Notes

BIOS Settings:

Sub NUMA Cluster : 2-Way Clustering

Virtualization Technology : Disabled

System Profile : Custom

CPU Power Management : Maximum Performance

C1E : Disabled

C States : Autonomous

Memory Patrol Scrub : Disabled

Energy Efficiency Policy : Performance

CPU Interconnect Bus Link

Power Management : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.7-ic2021.1/bin/sysinfo

Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c

running on localhost.localdomain Thu May 13 12:09:33 2021

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 6334 CPU @ 3.60GHz

2 "physical id"s (chips)

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

CPU2017 License: 55

Test Date: May-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Dec-2020

## Platform Notes (Continued)

```
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
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
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): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Gold 6334 CPU @ 3.60GHz
Stepping: 6
CPU MHz: 2710.868
BogoMIPS: 7200.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 18432K
NUMA node0 CPU(s): 0,4,8,12,16,20,24,28
NUMA node1 CPU(s): 2,6,10,14,18,22,26,30
NUMA node2 CPU(s): 1,5,9,13,17,21,25,29
NUMA node3 CPU(s): 3,7,11,15,19,23,27,31
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
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_13 invpcid_single
intel_ppin ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase tsc_adjust bmi1 hle avx2
smep bmi2 erms invpcid cqmq rdt_a avx512f avx512dq rdseed adx smap avx512ifma
clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsaves xgetbv1
xsaves cqmq_llc cqmq_occup_llc cqmq_mbm_total cqmq_mbm_local split_lock_detect wbnoinvd
dtherm ida arat pln pts avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d
arch_capabilities
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

CPU2017 License: 55

Test Date: May-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Dec-2020

## Platform Notes (Continued)

```
/proc/cpuinfo cache data
cache size : 18432 KB
```

From numactl --hardware    WARNING: a numactl 'node' might or might not correspond to a physical chip.

```
available: 4 nodes (0-3)
node 0 cpus: 0 4 8 12 16 20 24 28
node 0 size: 127400 MB
node 0 free: 111421 MB
node 1 cpus: 2 6 10 14 18 22 26 30
node 1 size: 128064 MB
node 1 free: 125581 MB
node 2 cpus: 1 5 9 13 17 21 25 29
node 2 size: 128071 MB
node 2 free: 125575 MB
node 3 cpus: 3 7 11 15 19 23 27 31
node 3 size: 127957 MB
node 3 free: 125497 MB
node distances:
node   0   1   2   3
  0: 10 11 20 20
  1: 11 10 20 20
  2: 20 20 10 11
  3: 20 20 11 10
```

From /proc/meminfo

```
MemTotal:      527812440 kB
HugePages_Total:       0
Hugepagesize:     2048 kB
```

/sbin/tuned-adm active
Current active profile: throughput-performance

From /etc/\*release\* /etc/\*version\*
os-release:
NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"
ID="rhel"
ID\_LIKE="fedora"
VERSION\_ID="8.3"
PLATFORM\_ID="platform:el8"
PRETTY\_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
ANSI\_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise\_linux:8.3:ga

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

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

Test Date: May-2021  
Hardware Availability: Apr-2021  
Software Availability: Dec-2020

## Platform Notes (Continued)

```
uname -a:  
Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020  
x86_64 x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit):	Not affected
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: usercopy/swaps barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2):	Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling):	Not affected
CVE-2019-11135 (TSX Asynchronous Abort):	Not affected

run-level 3 May 13 08:07

```
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.7-ic2021.1  
Filesystem      Type   Size  Used Avail Use% Mounted on  
tmpfs          tmpfs   125G   22G  104G  17% /mnt/ramdisk
```

From /sys/devices/virtual/dmi/id  
Vendor: Dell Inc.  
Product: PowerEdge C6520  
Product Family: PowerEdge

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:  
6x 002C00B3002C 18ASF4G72PDZ-3G2E1 32 GB 2 rank 3200  
10x 00AD063200AD HMAA4GR7AJR8N-XN 32 GB 2 rank 3200

BIOS:  
BIOS Vendor: Dell Inc.  
BIOS Version: 1.1.3  
BIOS Date: 04/27/2021  
BIOS Revision: 1.1

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

Test Date: May-2021

Hardware Availability: Apr-2021

Software Availability: Dec-2020

## Platform Notes (Continued)

(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) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
=====
```

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

```
=====
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
=====
```

```
=====
C++, C       | 511.povray_r(peak)
=====
```

```
=====
Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
  Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
=====
```

```
=====
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
  64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
=====
```

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

```
=====
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
=====
```

```
=====
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
=====
```

```
=====
C++, C       | 511.povray_r(peak)
=====
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

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

Test Date: May-2021  
Hardware Availability: Apr-2021  
Software Availability: Dec-2020

## Compiler Version Notes (Continued)

Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on  
Intel(R) 64, Version 2021.1 Build 20201112\_000000

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)  
64, Version 2021.1 Build 20201112\_000000

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====

C++, C | 511.povray\_r(base) 526.blender\_r(base, peak)

=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====

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

=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
Intel(R) 64, Version 2021.1 Build 20201112\_000000

Copyright (C) 1985-2020 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 Classic for applications running on  
Intel(R) 64, Version 2021.1 Build 20201112\_000000

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====

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

=====

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on  
Intel(R) 64, Version 2021.1 Build 20201112\_000000

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 180

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

SPECrate®2017\_fp\_peak = 185

CPU2017 License: 55

Test Date: May-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Dec-2020

## Compiler Version Notes (Continued)

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,

Version 2021.1 Build 20201113

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

---

## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

ifort icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifort

## 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



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

Test Date: May-2021

Hardware Availability: Apr-2021

Software Availability: Dec-2020

## Base Optimization Flags

C benchmarks:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-mbranches-within-32B-boundaries -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

C++ benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto  
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-mbranches-within-32B-boundaries -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div  
-qopt-prefetch -ffinite-math-only  
-qopt-multiple-gather-scatter-by-shuffles -qopt-mem-layout-trans=4  
-nostandard-realloc-lhs -align array32byte -auto  
-mbranches-within-32B-boundaries -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both Fortran and C:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-multiple-gather-scatter-by-shuffles  
-mbranches-within-32B-boundaries -nostandard-realloc-lhs  
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both C and C++:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-mbranches-within-32B-boundaries -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-multiple-gather-scatter-by-shuffles  
-mbranches-within-32B-boundaries -nostandard-realloc-lhs  
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

Test Date: May-2021

Hardware Availability: Apr-2021

Software Availability: Dec-2020

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

ifort icx

Benchmarks using both C and C++:

511.povray\_r: icpcicc

526.blender\_r: icpxicx

Benchmarks using Fortran, C, and C++:

icpxicxifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

519.lbm\_r: basepeak = yes

538.imagick\_r: basepeak = yes

544.nab\_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -festo  
-Ofast -qopt-mem-layout-trans=4  
-fimf-accuracy-bits=14:sqrt  
-mbranches-within-32B-boundaries -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

CPU2017 License: 55

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

Test Date: May-2021

Hardware Availability: Apr-2021

Software Availability: Dec-2020

## Peak Optimization Flags (Continued)

508.namd\_r: basepeak = yes

```
510.parest_r: -w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Fortran benchmarks:

503.bwaves\_r: basepeak = yes

549.fotonik3d\_r: basepeak = yes

```
554.roms_r: -w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs
-align array32byte -auto -mbranches-within-32B-boundaries
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both Fortran and C:

521.wrf\_r: basepeak = yes

527.cam4\_r: basepeak = yes

Benchmarks using both C and C++:

```
511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3
-ipo -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

526.blender\_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN\_r: basepeak = yes

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

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.html](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.html)

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-ICX-rev1.1.html>



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 180

SPECrate®2017\_fp\_peak = 185

PowerEdge C6520 (Intel Xeon Gold 6334, 3.60 GHz)

CPU2017 License: 55

Test Date: May-2021

Test Sponsor: Dell Inc.

Hardware Availability: Apr-2021

Tested by: Dell Inc.

Software Availability: Dec-2020

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

[http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64\\_revA.xml](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml)

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-ICX-rev1.1.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 v1.1.7 on 2021-05-13 13:09:32-0400.

Report generated on 2021-07-08 13:35:42 by CPU2017 PDF formatter v6442.

Originally published on 2021-07-06.