**SPEC CPU®2017 Floating Point Rate Result**

Dell Inc. PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
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<tbody>
<tr>
<td>385</td>
<td>405</td>
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</table>

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

**Test Date:** Apr-2021  
**Hardware Availability:** May-2021  
**Software Availability:** Feb-2021

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**Hardware**

- **CPU Name:** Intel Xeon Gold 6338
- **Max MHz:** 3200
- **Nominal:** 2000
- **Enabled:** 64 cores, 2 chips, 2 threads/core
- **Orderable:** 1.2 chips
- **Cache L1:** 32 KB I + 48 KB D on chip per core
- **Cache L2:** 1.25 MB I+D on chip per core
- **Cache L3:** 48 MB I+D on chip per chip
- **Other:** None
- **Memory:** 512 GB (16 x 32 GB 2Rx8 PC4-3200AA-R)
- **Storage:** 225 GB on tmpfs
- **Other:** None

**Software**

- **OS:** Red Hat Enterprise Linux 8.3 (Ootpa)
  - 4.18.0-240.15.1.el8_3.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
- **File System:** tmpfs
- **System State:** Run level 5 (graphical multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** None
- **jemalloc memory allocator V5.0.1**

(Continued on next page)
**Dell Inc.**

PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

<table>
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</tr>
</tbody>
</table>

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/ramdisk2/cpu2017-1.1.5-ic2021.1/lib/intel64:/mnt/ramdisk2/cpu2017-1.1.5-ic2021.1/je5.0.1-64"
MALLOC_CONF = "retain:true"
```
Dell Inc.

PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

**General Notes**

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

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


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.

Benchmark run from a 225 GB ramdisk created with the cmd: "mount -t tmpfs -o size=225G 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/ramdisk2/cpu2017-1.1.5-ic2021.1/bin/sysinfo

Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on localhost.localdomain Mon Apr 26 04:20:10 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

(Continued on next page)
**SPEC CPU®2017 Floating Point Rate Result**

**Dell Inc.**

PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

---

**SPECrate®2017_fp_base = 385**

**SPECrate®2017_fp_peak = 405**

---

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

---

**Test Date:** Apr-2021  
**Hardware Availability:** May-2021  
**Software Availability:** Feb-2021

---

**Platform Notes (Continued)**

model name : Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz  
2 "physical id"s (chips)  
128 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

cpu cores : 32  
siblings : 64

physical 0: cores 0 1 2 3 4 5 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

physical 1: cores 0 1 2 3 4 5 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

From lscpu:

Architecture: x86_64  
CPU op-mode(s): 32-bit, 64-bit  
Byte Order: Little Endian  
CPU(s): 128

On-line CPU(s) list: 0-127  
Thread(s) per core: 2  
Core(s) per socket: 32  
Socket(s): 2  
NUMA node(s): 4

Vendor ID: GenuineIntel  
CPU family: 6  
Model: 106  
Model name: Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz  
Stepping: 6  
CPU MHz: 2599.925  
BogoMIPS: 4000.00  
Virtualization: VT-x

L1d cache: 48K  
L1i cache: 32K  
L2 cache: 1280K  
L3 cache: 49152K

NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60,64,68,72,76,80,84,88,92,96,100,104,108,112,116,120,124

NUMA node1 CPU(s): 2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,66,70,74,78,82,86,90,94,98,102,106,110,114,118,122,126

NUMA node2 CPU(s): 1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77,81,85,89,93,97,101,105,109,113,117,121,125


Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov

(Continued on next page)
Dell Inc. PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

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CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: Apr-2021
Hardware Availability: May-2021
Software Availability: Feb-2021

Platform Notes (Continued)

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 nopt tso xtopology nonstop_tsc cpuid
aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
xtrr 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 invpcid_single
intel_pinn ssbd mba ibrs ibpb stibp ibrs_enhanced fs.gsbase tsc_adjust bmi1 hle avx2
smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma
clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1
xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect wbnoinvd
dthrm ida arat pln pts avx512vbmi umip pku ospke avx512_vbmi2 gfn i vaes vpclmulqdq
avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d
arch_capabilities

/cache size : 49152 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 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96
100 104 108 112 116 120 124
node 0 size: 124877 MB
node 0 free: 126920 MB
node 1 cpus: 2 6 10 14 18 22 26 30 34 38 42 46 50 54 58 62 66 70 74 78 82 86 90 94 98
102 106 110 114 118 122 126
node 1 size: 125560 MB
node 1 free: 128130 MB
node 2 cpus: 1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77 81 85 89 93 97
101 105 109 113 117 121 125
node 2 size: 125493 MB
node 2 free: 116465 MB
node 3 cpus: 3 7 11 15 19 23 27 31 35 39 43 47 51 55 59 63 67 71 75 79 83 87 91 95 99
103 107 111 115 119 123 127
node 3 size: 125890 MB
node 3 free: 125291 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: 527794132 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

(Continued on next page)
Dell Inc.

PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

SPEC CPU®2017 Floating Point Rate Result

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SPECrateny 2017_fp_base = 385
SPECrateny 2017_fp_peak = 405

CPU2017 License: 55
Test Sponsor: Dell Inc.
Test Date: Apr-2021
Tested by: Dell Inc.
Hardware Availability: May-2021
Software Availability: Feb-2021

Platform Notes (Continued)

/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

uname -a:
  Linux localhost.localdomain 4.18.0-240.15.1.el8_3.x86_64 #1 SMP Wed Feb 3 03:12:15 EST 2021 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: userscopy/swapgs 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 5 Apr 25 22:35

SPEC is set to: /mnt/ramdisk2/cpu2017-1.1.5-ic2021.1
  Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 225G 6.9G 219G 4% /mnt/ramdisk2

From /sys/devices/virtual/dmi/id
  Vendor: Dell Inc.
  Product: PowerEdge R750

(Continued on next page)
Dell Inc.

PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

SPEC®2017 Floating Point Rate Result

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SPECCpu2017 Floating Point Rate Result

SPECCpu2017_fp_base = 385
SPECCpu2017_fp_peak = 405

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

Test Date: Apr-2021
Hardware Availability: May-2021
Software Availability: Feb-2021

Platform Notes (Continued)

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:
12x 002C069D002C 18ASF4G72PDZ-3G2E1 32 GB 2 rank 3200
4x 00AD063200AD HMAA4GR7AJR8N-XN 32 GB 2 rank 3200
16x Not Specified Not Specified

BIOS:
BIOS Vendor: Dell Inc.
BIOS Version: 1.1.2
BIOS Date: 04/09/2021
BIOS Revision: 1.1

(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)

(Continued on next page)
Dell Inc.

PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

SPECrater®2017_fp_base = 385
SPECrater®2017_fp_peak = 405

Compiler Version Notes (Continued)

---

| 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. |

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| 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. |

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| 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. |

---

| C++, Fortran | 507.cactuBSSN_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. |
Dell Inc. PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

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

SPECraten®2017_fp_base = 385
SPECraten®2017_fp_peak = 405

Compiler Version Notes (Continued)

Intel(R) 64, Version 2021.1 Build 20201112_000000
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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
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Fortran, C  |  521.wrf_r(peak)

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Fortran, C  |  521.wrf_r(base) 527.cam4_r(base, peak)

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Fortran, C  |  521.wrf_r(peak)

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Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
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(Continued on next page)
## Dell Inc.

PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)

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</tr>
</tbody>
</table>

### Compiler Version Notes (Continued)

Fortran, C  | 521.wrf_r(base) 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

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

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### 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.ibm_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

(Continued on next page)
## Base Portability Flags (Continued)

- 549.fotonik3d_r: -DSPEC_LP64
- 554.roms_r: -DSPEC_LP64

## 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 -oqpt-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 -oqpt-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 -oqpt-prefetch -ffinite-math-only`  
- `-qopt-multiple-gather-scatter-by-shuffles`  

(Continued on next page)
Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):
- mbranches-within-32B-boundaries -nostandard-realloc-lhs
- align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Peak Compiler Invocation

C benchmarks:
icx
C++ benchmarks:
icpx
Fortran benchmarks:
ifort
Benchmarks using both Fortran and C:
521.wrf_r: ifort icc
527.cam4_r: ifort icx
Benchmarks using both C and C++:
511.povray_r: icpc icc
526.blender_r: icpx icx
Benchmarks using Fortran, C, and C++:
icpx icx ifort

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags
C benchmarks:
519.lbm_r: basepeak = yes

(Continued on next page)
**Dell Inc.**  
**PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)**

**SPECrate®2017_fp_base = 385**  
**SPECrate®2017_fp_peak = 405**

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

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**Peak Optimization Flags (Continued)**

```
538.imagick_r: basepeak = yes

544.nab_r: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
-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:

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: -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

549.fotonik3d_r: basepeak = yes

554.roms_r: Same as 503.bwaves_r

Benchmarks using both Fortran and C:

521.wrf_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
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

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
```

*(Continued on next page)*
Dell Inc. PowerEdge R750 (Intel Xeon Gold 6338, 2.00 GHz)  
SPECrated®2017_fp_base = 385  
SPECrated®2017_fp_peak = 405

CPU2017 License: 55  
Test Sponsor: Dell Inc.  
Tested by: Dell Inc.  
Test Date: Apr-2021  
Hardware Availability: May-2021  
Software Availability: Feb-2021

### Peak Optimization Flags (Continued)

511.povray_r (continued):
- 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

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

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