Dell Inc.
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

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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<th>Software</th>
<th>OS: Red Hat Enterprise Linux 8.3 (Ootpa)</th>
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<td>C/C++: Version 2021.1 of Intel oneAPI DPC++/C++</td>
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<td>Other:</td>
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<tr>
<td>Power Management:</td>
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<table>
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<tr>
<th>Hardware</th>
<th>CPU Name: Intel Xeon Platinum 8380</th>
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<tr>
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SPECrate®2017_fp_base = 470
SPECrate®2017_fp_peak = 500
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

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

SPECrate®2017_fp_base = 470
SPECrate®2017_fp_peak = 500

Results Table

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</table>

SPECrate®2017_fp_base = 470
SPECrate®2017_fp_peak = 500

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"
MALLOCP_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
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

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SPECrate®2017_fp_peak = 500

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

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

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

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 Mon Apr 12 14:01:58 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) Platinum 8380 CPU @ 2.30GHz

(Continued on next page)
Platform Notes (Continued)

2 "physical id"s (chips)  
160 "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 : 40  
siblings : 80
physical 0: cores 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 32 33 34 35 36 37 38 39
physical 1: cores 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 32 33 34 35 36 37 38 39

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 160
On-line CPU(s) list: 0-159
Thread(s) per core: 2
Core(s) per socket: 40
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8380 CPU @ 2.30GHz
Stepping: 6
CPU MHz: 3000.000
BogoMIPS: 4600.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 61440K
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,  
112,116,120,124,128,132,136,140,144,148,152,156
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  
,114,118,122,126,130,134,138,142,146,150,154,158
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  
,113,117,121,125,129,133,137,141,145,149,153,157
,115,119,123,127,131,135,139,143,147,151,155,159
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

(Continued on next page)
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SPECrate®2017_fp_base = 470
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 Platform Notes (Continued)

lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmpref pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtptr pdcn pcd 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_ppin ssbd mba ibrs ibpb xsaveopt xsaveopt xgetbv1 xsave cqm_llc cqm_occup_llc cqm_mbm_total cqm_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

From /proc/cpuinfo cache data
  cache size : 61440 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
     100 104 108 112 116 120 124 128 132 136 140 144 148 152 156
  node 0 size: 249683 MB
  node 0 free: 237190 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
     102 106 110 114 118 122 126 130 134 138 142 146 150 154 158
  node 1 size: 250570 MB
  node 1 free: 233526 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
     101 105 109 113 117 121 125 129 133 137 141 145 149 153 157
  node 2 size: 251276 MB
  node 2 free: 242536 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
     103 107 111 115 119 123 127 131 135 139 143 147 151 155 159
  node 3 size: 250770 MB
  node 3 free: 242618 MB
  node distances:
  node 0  1  2  3
    0: 10 11 20 20
    1: 11 20 20 20
    2: 20 20 10 11
    3: 20 20 11 10

From /proc/meminfo
  MemTotal: 1056266916 KB
  HugePages_Total: 0
  Hugepagesize: 2048 KB

/sbin/tuned-adm active

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

Dell Inc.
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

SPECRate®2017_fp_base = 470
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<td>Apr-2021</td>
<td>May-2021</td>
<td>Feb-2021</td>
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**Platform Notes (Continued)**

Current active profile: throughput-performance

From /etc/*release* /etc/*version*

```plaintext
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: usercopy/swapsgs 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 Apr 12 03:43 last=5**

**SPEC is set to:** /mnt/ramdisk/cpu2017-1.1.7-ic2021.1

**Filesystem** | **Type** | **Size** | **Used** | **Avail** | **Use%** | **Mounted on**
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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<tr>
<td>tmpfs</td>
<td>tmpfs</td>
<td>125G</td>
<td>66G</td>
<td>60G</td>
<td>53%</td>
<td>/mnt/ramdisk</td>
</tr>
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</table>

From /sys/devices/virtual/dmi/id

- Vendor: Dell Inc.
- Product: PowerEdge R750
- Product Family: PowerEdge

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

**Dell Inc.**
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

<table>
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<tr>
<th>SPECrate®2017_fp_base</th>
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<td>SPECrate®2017_fp_peak</td>
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CPU2017 License: 55  Test Date:  Apr-2021  
Test Sponsor: Dell Inc.  Hardware Availability: May-2021  
Tested by: Dell Inc.  Software Availability: Feb-2021

**Platform Notes (Continued)**

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:
- 8x 00AD063200AD HMAA8GR7AJR4N-XN 64 GB 2 rank 3200
- 8x 00AD069D00AD HMAA8GR7AJR4N-XN 64 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**

```plaintext
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<table>
<thead>
<tr>
<th>C</th>
<th>519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_r(base, peak)</th>
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<tr>
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<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,</td>
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<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
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<tr>
<td>---------</td>
<td>------------------------------------------------------------------------</td>
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<tr>
<td></td>
<td>C++</td>
</tr>
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</tr>
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<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,</td>
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<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
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(Continued on next page)
Dell Inc.

PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

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.
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
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==============================================================================
C++, C          | 511.povray_r(base) 526.blender_r(base, peak)
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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.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.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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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.
(Continued on next page)
Dell Inc.
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

SPECrate®2017_fp_base = 470
SPECrate®2017_fp_peak = 500

Compiler Version Notes (Continued)

==============================================================================
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(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.
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.
==============================================================================
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
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.
==============================================================================
Fortran, C      | 521.wrf_r(peak)
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Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
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Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
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==============================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base, peak)
(Continued on next page)
**Dell Inc.**  
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)  

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

**SPECrate®2017_fp_base = 470**  
**SPECrate®2017_fp_peak = 500**

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<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: May-2021</td>
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<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Feb-2021</td>
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**Compiler Version Notes (Continued)**

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.  
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.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  
549.fotonik3d_r: -DSPEC_LP64  
554.roms_r: -DSPEC_LP64
Dell Inc.  
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

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

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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

### 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`
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
538.imagick_r basepeak = yes

544.nab_r -W -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
-Ofast -gopt-mem-layout-trans=4
-flimf-accuracy-bits=14:sqrt
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

(Continued on next page)
Dell Inc.
PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)

SPEC CPU®2017 Floating Point Rate Result
Copyright 2017-2021 Standard Performance Evaluation Corporation

SPECrate®2017_fp_base = 470
SPECrate®2017_fp_peak = 500

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)

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 -mbranches-within-32B-boundaries
-align array32byte -auto -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
-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++:

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

#### Dell Inc.

**PowerEdge R750 (Intel Xeon Platinum 8380, 2.30 GHz)**

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**Tested by:** Dell Inc.  
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**Hardware Availability:** May-2021  
**Software Availability:** Feb-2021

### Peak Optimization Flags (Continued)

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:


---

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

Tested with SPEC CPU®2017 v1.1.7 on 2021-04-12 15:01:57-0400.  
Originally published on 2021-05-18.