# SPEC CPU®2017 Floating Point Speed Result

## Dell Inc.

**PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz)**

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>95.1</td>
<td>95.6</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** May-2020  
**Hardware Availability:** Feb-2020  
**Software Availability:** Nov-2019

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Silver 4214R</td>
</tr>
<tr>
<td>Max MHz</td>
<td>3500</td>
</tr>
<tr>
<td>Nominal</td>
<td>2400</td>
</tr>
<tr>
<td>Enabled</td>
<td>24 cores, 2 chips, 2 threads/core</td>
</tr>
<tr>
<td>Orderable</td>
<td>1.2 chips</td>
</tr>
<tr>
<td>Cache L1</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>L2</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3</td>
<td>16.5 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Memory</td>
<td>384 GB (24 x 16 GB 2Rx8 PC4-2933V-R, running at 2400)</td>
</tr>
<tr>
<td>Storage</td>
<td>1 x 1.92 TB SATA SSD</td>
</tr>
<tr>
<td>Other</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Red Hat Enterprise Linux 8.1</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 19.0.5.281 of Intel C/C++ Compiler for Linux; Fortran: Version 19.0.5.281 of Intel Fortran Compiler for Linux</td>
</tr>
<tr>
<td>Parallel</td>
<td>Yes</td>
</tr>
<tr>
<td>Firmware</td>
<td>Version 2.5.4 released Jan-2020</td>
</tr>
<tr>
<td>File System</td>
<td>tmpfs</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>64-bit</td>
</tr>
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<td>Other</td>
<td>None</td>
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<tr>
<td>Power Management</td>
<td>BIOS set to prefer performance at the cost of additional power usage</td>
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</table>

### Benchmarks

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
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<tbody>
<tr>
<td>603.bwaves_s</td>
<td>48</td>
<td>95.6</td>
<td></td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>48</td>
<td>95.1</td>
<td></td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>48</td>
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</tr>
<tr>
<td>621.wrf_s</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>644.nab_s</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>654.roms_s</td>
<td>48</td>
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</tr>
</tbody>
</table>

---

The Dell Inc. PowerEdge R640 with an Intel Xeon Silver 4214R processor achieved a SPECspeed®2017_fp_base of 95.1 and a SPECspeed®2017_fp_peak of 95.6 in the SPEC CPU®2017 Floating Point Speed benchmark. The test was conducted by Dell Inc. in May-2020.
Dell Inc.

PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz)

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

SPECspeed®2017_fp_base = 95.1
SPECspeed®2017_fp_peak = 95.6

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>48</td>
<td>154</td>
<td>383</td>
<td>154</td>
<td>383</td>
<td>48</td>
<td>155</td>
<td>382</td>
<td>155</td>
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<tr>
<td>607.cactuBSSN_s</td>
<td>48</td>
<td>156</td>
<td>107</td>
<td>156</td>
<td>107</td>
<td>48</td>
<td>156</td>
<td>107</td>
<td>156</td>
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<tr>
<td>619.lbm_s</td>
<td>48</td>
<td>74.9</td>
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<td>74.4</td>
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<td>74.9</td>
<td>69.9</td>
<td>74.4</td>
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<td>621.wrf_s</td>
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<td>91.4</td>
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<td>91.0</td>
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<td>142</td>
<td>93.0</td>
<td>142</td>
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<tr>
<td>627.cam4_s</td>
<td>48</td>
<td>116</td>
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<td>115</td>
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<tr>
<td>628.pop2_s</td>
<td>48</td>
<td>241</td>
<td>49.2</td>
<td>238</td>
<td>49.9</td>
<td>48</td>
<td>227</td>
<td>52.2</td>
<td>231</td>
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<tr>
<td>638.imagick_s</td>
<td>48</td>
<td>194</td>
<td>74.2</td>
<td>194</td>
<td>74.2</td>
<td>48</td>
<td>194</td>
<td>74.2</td>
<td>194</td>
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<tr>
<td>644.nab_s</td>
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<td>109</td>
<td>161</td>
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<td>160</td>
<td>48</td>
<td>109</td>
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<tr>
<td>649.fotonik3d_s</td>
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<td>68.8</td>
<td>133</td>
<td>68.8</td>
<td>48</td>
<td>134</td>
<td>68.1</td>
<td>132</td>
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<tr>
<td>654.roms_s</td>
<td>48</td>
<td>208</td>
<td>75.8</td>
<td>208</td>
<td>75.7</td>
<td>48</td>
<td>208</td>
<td>75.8</td>
<td>208</td>
</tr>
</tbody>
</table>

SPECspeed®2017_fp_base = 95.1
SPECspeed®2017_fp_peak = 95.6

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

Operating System Notes
Stack size set to unlimited using "ulimit -s unlimited"

Environment Variables Notes
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/mnt/ramdisk/cpu2017/lib/intel64"
OMP_STACKSIZE = "192M"

General Notes
Binaries compiled on a system with 1x Intel Core i9-9900K CPU + 64GB RAM memory using Redhat Enterprise Linux 8.0
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) 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
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 disabled
- 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 /mnt/ramdisk/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7ed81e6e46a485a0011
running on rhel-8-1-sut Fri May 15 19:00:04 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 4214R CPU @ 2.40GHz
- 2 "physical id"s (chips)
- 48 "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: 12
  - siblings: 24
  - physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  - physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13

From lscpu:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- CPU(s): 48
- On-line CPU(s) list: 0-47
- Thread(s) per core: 2
- Core(s) per socket: 12
- Socket(s): 2
- NUMA node(s): 4

(Continued on next page)
Dell Inc.

PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz)

**SPECspeed®2017_fp_base** = 95.1

**SPECspeed®2017_fp_peak** = 95.6

Cpu2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: May-2020
Hardware Availability: Feb-2020
Software Availability: Nov-2019

Platform Notes (Continued)

Vendor ID:        GenuineIntel
CPU family:       6
Model:            85
Model name:       Intel(R) Xeon(R) Silver 4214R CPU @ 2.40GHz
Stepping:         7
CPU MHz:          1364.686
CPU max MHz:      3500.0000
CPU min MHz:      1000.0000
BogoMIPS:         4800.00
Virtualization:   VT-x
L1d cache:        32K
L1i cache:        32K
L2 cache:         1024K
L3 cache:         16896K
NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,32,36,40,44
NUMA node1 CPU(s): 1,5,9,13,17,21,25,29,33,37,41,45
NUMA node2 CPU(s): 2,6,10,14,18,22,26,30,34,38,42,46
NUMA node3 CPU(s): 3,7,11,15,19,23,27,31,35,39,43,47
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 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 pcpuid tsc_deadline_timer aes xsave avx f16c
                  rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3
                  invpcid_single intel_pmm ssbd mba ibrs ibp bb ibrs_enabled tpr_shadow
                  vmm flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2
                  erms invpcid rtm cqm mpx rdt_a avx512f avx512dq rdseed adx
                  clamflushopt clwb intel_pt avx512ld avx512bw avx512vl xsaveopt
                  xsavec xSAVE xSAVEc xXSAVE xXSAVE cqm_llc cqm_occup_llc
                  cqm_mbb_total cqm_mbb_local dtherm ida arat pln pts pku ospke
                  avx512_vnni md_clear flush_lld arch_capabilities

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
node 0 size: 95281 MB
node 0 free: 94680 MB
node 1 cpus: 1 5 9 13 17 21 25 29 33 37 41 45
node 1 size: 96765 MB
node 1 free: 74808 MB
node 2 cpus: 2 6 10 14 18 22 26 30 34 38 42 46
node 2 size: 96765 MB
node 2 free: 96083 MB
node 3 cpus: 3 7 11 15 19 23 27 31 35 39 43 47

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

Dell Inc.

**PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz)**

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base = 95.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak = 95.6</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 55  
**Test Date:** May-2020  
**Test Sponsor:** Dell Inc.  
**Hardware Availability:** Feb-2020  
**Tested by:** Dell Inc.  
**Software Availability:** Nov-2019

### Platform Notes (Continued)

- **node 3 size:** 96764 MB  
- **node 3 free:** 96646 MB  
- **node distances:**
  - 0: 10 21 11 21  
  - 1: 21 10 21 11  
  - 2: 11 21 10 21  
  - 3: 21 11 21 10

From /proc/meminfo
- **MemTotal:** 394831136 kB  
- **HugePages_Total:** 0  
- **Hugepagesize:** 2048 kB

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

- **redhat-release:** Red Hat Enterprise Linux release 8.1 (Ootpa)  
- **system-release:** Red Hat Enterprise Linux release 8.1 (Ootpa)  
- **system-release-cpe:** cpe:/o:redhat:enterprise_linux:8.1:ga

**uname -a:**
```
Linux rhel-8-1-sut 4.18.0-147.el8.x86_64 #1 SMP Thu Sep 26 15:52:44 UTC 2019 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: usercopy/swaps barriers and __user pointer sanitization  
- **CVE-2017-5715 (Spectre variant 2):** Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

**run-level 3 May 15 15:14 last=5**

**SPEC is set to:** /mnt/ramdisk/cpu2017

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

Dell Inc.

PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz)

SPECspeed®2017_fp_base = 95.1
SPECspeed®2017_fp_peak = 95.6

CPU2017 License: 55  Test Date:  May-2020
Test Sponsor:  Dell Inc.  Hardware Availability:  Feb-2020
Tested by:  Dell Inc.  Software Availability:  Nov-2019

Platform Notes (Continued)

Filesystem     Type   Size  Used Avail Use% Mounted on
  tmpfs          tmpfs  200G   14G  187G   7% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
  BIOS:    Dell Inc. 2.5.4 01/13/2020
  Vendor:  Dell Inc.
  Product: PowerEdge R640
  Product Family: PowerEdge
  Serial:  FPFXCH2

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:
  10x 002C069D002C 18ASF2G72PDZ-2G9E1 16 GB 2 rank 2933
  4x 00AD00B300AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933
  8x 00AD00B300AD HMA82GR7CJR8N-XN 16 GB 2 rank 3200
  2x 00AD063200AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
<table>
<thead>
<tr>
<th>C</th>
<th>619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,</td>
<td></td>
</tr>
<tr>
<td>Version 19.0.5.281 Build 20190815</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2019 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
<tr>
<td>==============================================================================</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C++, C, Fortran</th>
<th>607.cactuBSSN_s(base, peak)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,</td>
<td></td>
</tr>
<tr>
<td>Version 19.0.5.281 Build 20190815</td>
<td></td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,</td>
<td></td>
</tr>
<tr>
<td>Version 19.0.5.281 Build 20190815</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2019 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
<tr>
<td>Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)</td>
<td></td>
</tr>
<tr>
<td>64, Version 19.0.5.281 Build 20190815</td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
</tbody>
</table>

(Continued on next page)
Compiler Version Notes (Continued)

==============================================================================
Fortran         | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
                | 654.roms_s(base, peak)
------------------------------------------------------------------------------

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.5.281 Build 20190815
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
==============================================================================

Fortran, C      | 621.wrf_s(base, peak) 627.cam4_s(base, peak)
                | 628.pop2_s(base, peak)
------------------------------------------------------------------------------

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.5.281 Build 20190815
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icc

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

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG

(Continued on next page)
Dell Inc.

PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz)

**SPECspeed®2017_fp_base = 95.1**

**SPECspeed®2017_fp_peak = 95.6**

---

**Base Portability Flags (Continued)**

628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

---

**Base Optimization Flags**

**C benchmarks:**
-m64 -std=c11 -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP

**Fortran benchmarks:**
-m64 -DSPEC_OPENMP -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp
-nostandard-realloc-lhs

**Benchmarks using both Fortran and C:**
-m64 -std=c11 -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs

**Benchmarks using Fortran, C, and C++:**
-m64 -std=c11 -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs

---

**Peak Compiler Invocation**

**C benchmarks:**
icc

**Fortran benchmarks:**
ifort

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

**Benchmarks using Fortran, C, and C++:**
icpc icc ifort
Dell Inc. PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz) SPECspeed®2017_fp_base = 95.1
SPECspeed®2017_fp_peak = 95.6

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: May-2020
Hardware Availability: Feb-2020
Software Availability: Nov-2019

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
619.lbm_s: basepeak = yes
638.imagick_s: basepeak = yes
644.nab_s: -m64 -std=c11 -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4
-qopenmp -DSPEC_OPENMP

Fortran benchmarks:
603.bwaves_s: -m64 -prof-gen(pass 1) -prof-use(pass 2)
-DSPEC_SUPPRESS_OPENMP -DSPEC_OPENMP -O2 -xCORE-AVX512
-qopt-prefetch -ipo -O3 -ffinite-math-only -no-prec-div
-qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs
649.fotonik3d_s: Same as 603.bwaves_s
654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:
621.wrf_s: -m64 -std=c11 -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX512 -qopt-prefetch -ipo -O3 -ffinite-math-only
-no-prec-div -qopt-mem-layout-trans=4
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs
627.cam4_s: -m64 -std=c11 -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4
-qopenmp -DSPEC_OPENMP -nostandard-realloc-lhs
628.pop2_s: Same as 621.wrf_s

Benchmarks using Fortran, C, and C++:
607.cactusBSSN_s: basepeak = yes
**SPEC CPU®2017 Floating Point Speed Result**

**Dell Inc.**

PowerEdge R640 (Intel Xeon Silver 4214R, 2.40 GHz)

<table>
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<tr>
<th>SPECspeed®2017_fp_base = 95.1</th>
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<td>Hardware Availability: Feb-2020</td>
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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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