Dell Inc.

PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)

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

**Specspeed®2017_fp_base = 167**  
**Specspeed®2017_fp_peak = 170**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>48</td>
<td>207</td>
<td>207</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>48</td>
<td>118</td>
<td>118</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>48</td>
<td>134</td>
<td>144</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>48</td>
<td>118</td>
<td>144</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>48</td>
<td>74.8</td>
<td>283</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>48</td>
<td>146</td>
<td>322</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>48</td>
<td>108</td>
<td>207</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>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon Gold 5318Y  
- **Max MHz:** 3400  
- **Nominal:** 2100  
- **Enabled:** 48 cores, 2 chips  
- **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:** 36 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 512 GB (16 x 32 GB 2Rx8 PC4-3200AA-R, running at 2933)  
- **Storage:** 225 GB on tmpfs  
- **Other:** None

**Software**

- **OS:** Red Hat Enterprise Linux 8.4 (Ootpa)  
  4.18.0-305.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:** Yes  
- **Firmware:** Version 1.2.1 released May-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.
Dell Inc.  
PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)  

**SPECspeed®2017_fp_base = 167**  
**SPECspeed®2017_fp_peak = 170**

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</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>93.9</td>
<td>628</td>
<td>93.8</td>
<td>629</td>
<td>93.9</td>
<td>628</td>
<td>93.9</td>
<td>628</td>
<td>93.8</td>
<td>629</td>
<td>93.8</td>
<td>629</td>
<td></td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>48</td>
<td>80.5</td>
<td>207</td>
<td>80.0</td>
<td>208</td>
<td>80.5</td>
<td>207</td>
<td>80.5</td>
<td>207</td>
<td>80.0</td>
<td>208</td>
<td>80.0</td>
<td>208</td>
<td></td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>48</td>
<td>41.0</td>
<td>128</td>
<td>44.3</td>
<td>118</td>
<td>41.0</td>
<td>128</td>
<td>44.3</td>
<td>118</td>
<td>41.0</td>
<td>128</td>
<td>44.3</td>
<td>118</td>
<td></td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>48</td>
<td>98.8</td>
<td>134</td>
<td>97.4</td>
<td>136</td>
<td>98.8</td>
<td>134</td>
<td>98.8</td>
<td>134</td>
<td>97.4</td>
<td>136</td>
<td>98.8</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>48</td>
<td>75.2</td>
<td>118</td>
<td>74.8</td>
<td>119</td>
<td>75.2</td>
<td>118</td>
<td>74.8</td>
<td>119</td>
<td>74.8</td>
<td>119</td>
<td>74.8</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>48</td>
<td>159</td>
<td>74.8</td>
<td>156</td>
<td>76.2</td>
<td>159</td>
<td>74.8</td>
<td>156</td>
<td>76.2</td>
<td>156</td>
<td>76.2</td>
<td>156</td>
<td>76.2</td>
<td></td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>48</td>
<td>98.6</td>
<td>146</td>
<td>98.9</td>
<td>146</td>
<td>98.6</td>
<td>146</td>
<td>98.9</td>
<td>146</td>
<td>98.9</td>
<td>146</td>
<td>98.9</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td>644.nab_s</td>
<td>48</td>
<td>61.7</td>
<td>283</td>
<td>61.7</td>
<td>283</td>
<td>61.7</td>
<td>283</td>
<td>61.7</td>
<td>283</td>
<td>61.7</td>
<td>283</td>
<td>61.7</td>
<td>283</td>
<td></td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>48</td>
<td>84.2</td>
<td>108</td>
<td>84.0</td>
<td>108</td>
<td>84.2</td>
<td>108</td>
<td>84.0</td>
<td>108</td>
<td>84.0</td>
<td>108</td>
<td>84.0</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>654.roms_s</td>
<td>48</td>
<td>74.7</td>
<td>211</td>
<td>76.1</td>
<td>207</td>
<td>74.7</td>
<td>211</td>
<td>76.1</td>
<td>207</td>
<td>76.1</td>
<td>207</td>
<td>76.1</td>
<td>207</td>
<td></td>
</tr>
</tbody>
</table>

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/cpu2017-1.1.8-ic2021.1/lib/intel64:/mnt/ramdisk/cpu2017-1.1.8-ic2021.1/je5.0.1-64"
MALLOCONF = "retain:true"
OMP_STACKSIZE = "192M"

**General Notes**

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM memory using Redhat Enterprise Linux 8.0
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

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Dell Inc.  
PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)  

SPECspeed®2017_fp_base = 167  
SPECspeed®2017_fp_peak = 170

General Notes (Continued)

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:
   Logical Processor : Disabled
   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
   PCI ASPM L1 Link
      Power Management : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.8-ic2021.1/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acaf64d
running on r750xs.jzjpm83.inside.dell.com Tue Sep  7 15:52:32 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 5318Y CPU @ 2.10GHz
     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 : 24
   siblings : 24
   physical 0: cores 0 1 10 11 12 13 14 15 16 17 18 19 20 21 22 23
   physical 1: cores 0 1 10 11 12 13 14 15 16 17 18 19 20 21 22 23

From lscpu from util-linux 2.32.1:
   Architecture: x86_64

(Continued on next page)
## Platform Notes (Continued)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU op-mode(s):</td>
<td>32-bit, 64-bit</td>
</tr>
<tr>
<td>Byte Order:</td>
<td>Little Endian</td>
</tr>
<tr>
<td>CPU(s):</td>
<td>48</td>
</tr>
<tr>
<td>On-line CPU(s) list:</td>
<td>0-47</td>
</tr>
<tr>
<td>Thread(s) per core:</td>
<td>1</td>
</tr>
<tr>
<td>Core(s) per socket:</td>
<td>24</td>
</tr>
<tr>
<td>Socket(s):</td>
<td>2</td>
</tr>
<tr>
<td>NUMA node(s):</td>
<td>2</td>
</tr>
<tr>
<td>Vendor ID:</td>
<td>GenuineIntel</td>
</tr>
<tr>
<td>BIOS Vendor ID:</td>
<td>Intel</td>
</tr>
<tr>
<td>CPU family:</td>
<td>6</td>
</tr>
<tr>
<td>Model:</td>
<td>106</td>
</tr>
<tr>
<td>Model name:</td>
<td>Intel(R) Xeon(R) Gold 5318Y CPU @ 2.10GHz</td>
</tr>
<tr>
<td>BIOS Model name:</td>
<td>Intel(R) Xeon(R) Gold 5318Y CPU @ 2.10GHz</td>
</tr>
<tr>
<td>Stepping:</td>
<td>6</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3400.000</td>
</tr>
<tr>
<td>BogoMIPS:</td>
<td>4200.00</td>
</tr>
<tr>
<td>Virtualization:</td>
<td>VT-x</td>
</tr>
<tr>
<td>L1d cache:</td>
<td>48K</td>
</tr>
<tr>
<td>L1i cache:</td>
<td>32K</td>
</tr>
<tr>
<td>L2 cache:</td>
<td>1280K</td>
</tr>
<tr>
<td>L3 cache:</td>
<td>36864K</td>
</tr>
<tr>
<td>NUMA node0 CPU(s):</td>
<td>0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46</td>
</tr>
<tr>
<td>NUMA node1 CPU(s):</td>
<td>1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47</td>
</tr>
<tr>
<td>Flags:</td>
<td>fpu vme de pse tsc msr mcr mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdscpe lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperf perfctr pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtrcap xtpcap 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 fsbgbase tsc_adjust bni hle avx2 smep bmi2 erms invpcid cqm rdt_a avx512if vavx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsaveopt xsaveopt xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local split_lock_detect wbnoinvub dtherm ida arat pin pts avx512vbi umip pku ospek avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntd q 1a57 rdpid fsrm md_clear pconfig flush_lld arch_capabilities</td>
</tr>
<tr>
<td>/proc/cpuinfo cache data</td>
<td>cache size = 36864 KB</td>
</tr>
</tbody>
</table>

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 32 34 36 38 40 42 44 46

(Continued on next page)
Dell Inc. PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)

SPECspeed®2017_fp_base = 167
SPECspeed®2017_fp_peak = 170

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

Platform Notes (Continued)

node 0 size: 257143 MB
node 0 free: 241589 MB
node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47
node 1 size: 258040 MB
node 1 free: 256176 MB

node distances:
node 0 1
0: 10 20
1: 20 10

From /proc/meminfo
   MemTotal:      527547592 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="8.4 (Ootpa)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="8.4"
      PLATFORM_ID="platform:el8"
      PRETTY_NAME="Red Hat Enterprise Linux 8.4 (Ootpa)"
      ANSI_COLOR="0;31"
   redhat-release: Red Hat Enterprise Linux release 8.4 (Ootpa)
   system-release: Red Hat Enterprise Linux release 8.4 (Ootpa)
   system-release-cpe: cpe:/o:redhat:enterprise_linux:8.4:ga

uname -a:
   Linux r750xs.jzjpm83.inside.dell.com 4.18.0-305.el8.x86_64 #1 SMP Thu Apr 29 08:54:30 EDT 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): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2018-3639 (Speculative Store Bypass): Mitigation: usercopy/swaps barriers and __user pointer
CVE-2017-5753 (Spectre variant 1):
Platform Notes (Continued)

CVE-2017-5715 (Spectre variant 2): sanitation
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 Sep 7 13:00

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.8-ic2021.1
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 225G 11G 215G 5% /mnt/ramdisk

From /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge R750xs
Product Family: PowerEdge
Serial: JZJPM83

Additional information from dmidecode 3.2 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:
16x 002C069D002C 18ASF4G72PDZ-3G2E1 32 GB 2 rank 3200, configured at 2933

BIOS:
BIOS Vendor: Dell Inc.
BIOS Version: 1.2.1
BIOS Date: 05/28/2021
BIOS Revision: 1.2

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C | 619.lbm_s(base, peak) 638.imagick_s(base, peak)
   644.nab_s(base)
==============================================================================

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 | 644.nab_s(peak)

(Continued on next page)
Dell Inc.

PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)

SPECspeed®2017_fp_base = 167
SPECspeed®2017_fp_peak = 170

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

Compiler Version Notes (Continued)

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               | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base)
==============================================================================
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               | 644.nab_s(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, Fortran | 607.cactuBSSN_s(base, 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.
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         | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(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.
**SPEC CPU®2017 Floating Point Speed Result**

**Dell Inc.**

PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base = 167</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak = 170</td>
</tr>
</tbody>
</table>

**Compiler Version Notes (Continued)**

<table>
<thead>
<tr>
<th>Fortran, C</th>
<th>621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)</th>
</tr>
</thead>
</table>

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.

**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
- 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
Dell Inc. PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base = 167</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak = 170</td>
</tr>
</tbody>
</table>

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

**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`  
- `-mbranches-within-32B-boundaries`

Fortran benchmarks:
- `-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -ipo -O3`  
- `-no-prec-div -qopt-prefetch -ffinite-math-only`  
- `-qopt-mem-layout-trans=4 -qopenmp -nostandard-realloc-lhs`  
- `-mbranches-within-32B-boundaries -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Benchmarks using both Fortran and C:
- `-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3`  
- `-no-prec-div -qopt-prefetch -ffinite-math-only`  
- `-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP`  
- `-mbranches-within-32B-boundaries -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

Benchmarks using Fortran, C, and C++:
- `-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`  
- `-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP`  
- `-mbranches-within-32B-boundaries -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

**Peak Compiler Invocation**

C benchmarks (except as noted below):
- `icc`
- `644.nab_s: icx`

Fortran benchmarks:
- `ifort`

Benchmarks using both Fortran and C:
- `ifort icc`

Benchmarks using Fortran, C, and C++:
- `icpc icc ifort`
# SPEC CPU®2017 Floating Point Speed Result

## Dell Inc.

PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>167</td>
<td>170</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 55  
**Test Date:** Sep-2021  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Hardware Availability:** Jul-2021  
**Software Availability:** May-2021

### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

#### C benchmarks:

- `619.lbm_s: basepeak = yes`
- `638.imagick_s: basepeak = yes`

#### Fortran benchmarks:

- `603.bwaves_s: basepeak = yes`
- `649.fotonik3d_s: basepeak = yes`
- `654.roms_s: basepeak = yes`

#### Benchmarks using both Fortran and C:

- `621.wrf_s: -m64 -std=c11 -Wl, -z, multdefs -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=4 -DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP -mbranch-within-32B-boundaries -nostandard-realloc-lhs -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`
- `627.cam4_s: basepeak = yes`
- `628.pop2_s: basepeak = yes`

#### Benchmarks using Fortran, C, and C++:

- `607.cactuBSSN_s: basepeak = yes`
Dell Inc.

PowerEdge R750xs (Intel Xeon Gold 5318Y, 2.10 GHz) | SPECspeed\textsuperscript{®}2017\_fp\_peak = 170 | SPECspeed\textsuperscript{®}2017\_fp\_base = 167

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>55</th>
<th>Test Date:</th>
<th>Sep-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Dell Inc.</td>
<td>Hardware Availability:</td>
<td>Jul-2021</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
<td>Software Availability:</td>
<td>May-2021</td>
</tr>
</tbody>
</table>

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
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-ICX-rev1.4.xml

SPEC CPU and SPECspeed 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.

Tested with SPEC CPU\textsuperscript{®}2017 v1.1.8 on 2021-09-07 16:52:32-0400.
Originally published on 2021-11-09.