### SPEC CPU®2017 Integer Speed Result

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

**SPECspeed®2017_int_base = 11.5**

**SPECspeed®2017_int_peak = 11.8**

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>Dell Inc.</th>
<th>Hardware Availability</th>
<th>Apr-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by</td>
<td>Dell Inc.</td>
<td>Hardware Availability</td>
<td>Jul-2020</td>
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<tr>
<td>CPU2017 License:</td>
<td>55</td>
<td>Software Availability</td>
<td>Apr-2020</td>
</tr>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon Gold 6238R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max MHz:</td>
<td>4000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal:</td>
<td>2200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enabled:</td>
<td>56 cores, 2 chips</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orderable:</td>
<td>1.2 chips</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cache L1:</td>
<td>32 KB I + 32 KB D on chip per core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L2:</td>
<td>1 MB I+D on chip per core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L3:</td>
<td>38.5 MB I+D on chip per chip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
<td></td>
<td></td>
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<tr>
<td>Memory:</td>
<td>768 GB (24 x 32 GB 2Rx4 PC4-2933V-R, running at 2933)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage:</td>
<td>1 x 1.92 TB SATA SSD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
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<td>OS:</td>
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<td>Parallel:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Firmware:</td>
<td>Version 2.7.7 released May-2020</td>
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<tr>
<td>File System:</td>
<td>tmpfs</td>
<td></td>
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</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>64-bit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>jemalloc memory allocator V5.0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Management:</td>
<td>BIOS set to prefer performance at the cost of additional power usage</td>
<td></td>
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</tr>
</tbody>
</table>

### Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_s</td>
<td>56</td>
<td>6.87</td>
<td>11.8</td>
</tr>
<tr>
<td>gcc_s</td>
<td>56</td>
<td>10.7</td>
<td>11.1</td>
</tr>
<tr>
<td>mcf_s</td>
<td>56</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>omnetpp_s</td>
<td>56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xalancbmk_s</td>
<td>56</td>
<td>13.9</td>
<td></td>
</tr>
<tr>
<td>x264_s</td>
<td>56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>deepsjeng_s</td>
<td>56</td>
<td>5.93</td>
<td></td>
</tr>
<tr>
<td>leela_s</td>
<td>56</td>
<td>4.90</td>
<td></td>
</tr>
<tr>
<td>exchange2_s</td>
<td>56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xz_s</td>
<td>56</td>
<td>16.9</td>
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</table>

Software

**OS:** Red Hat Enterprise Linux 8.1  
**Compiler:** C/C++: Version 19.1.1.217 of Intel C/C++ Compiler for Linux; Fortran: Version 19.1.1.217 of Intel Fortran Compiler for Linux  
**Parallel:** Yes  
**Firmware:** Version 2.7.7 released May-2020  
**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 set to prefer performance at the cost of additional power usage
SPEC CPU®2017 Integer Speed Result

Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.

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

Test Date: Jun-2020
Hardware Availability: Jul-2020
Software Availability: Apr-2020

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>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>56</td>
<td>258</td>
<td>6.87</td>
<td>258</td>
<td>6.87</td>
<td>258</td>
<td>6.87</td>
<td>56</td>
<td>224</td>
<td>7.93</td>
<td>225</td>
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<tr>
<td>602.gcc_s</td>
<td>56</td>
<td>368</td>
<td>10.8</td>
<td>375</td>
<td>10.6</td>
<td>374</td>
<td>10.7</td>
<td>56</td>
<td>359</td>
<td>11.1</td>
<td>358</td>
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<tr>
<td>605.mcf_s</td>
<td>56</td>
<td>252</td>
<td>18.7</td>
<td>251</td>
<td>18.8</td>
<td>252</td>
<td>18.7</td>
<td>56</td>
<td>252</td>
<td>18.7</td>
<td>251</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>56</td>
<td>147</td>
<td>11.1</td>
<td>149</td>
<td>10.9</td>
<td>146</td>
<td>11.1</td>
<td>56</td>
<td>147</td>
<td>11.1</td>
<td>149</td>
</tr>
<tr>
<td>623.xalanchmk_s</td>
<td>56</td>
<td>102</td>
<td>13.9</td>
<td>102</td>
<td>13.9</td>
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<td>625.x264_s</td>
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<td>104</td>
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<td>103</td>
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<td>631.deepsjeng_s</td>
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<td>5.92</td>
<td>242</td>
<td>5.93</td>
<td>242</td>
<td>5.93</td>
<td>56</td>
<td>242</td>
<td>5.92</td>
<td>242</td>
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<tr>
<td>641.leela_s</td>
<td>56</td>
<td>348</td>
<td>4.90</td>
<td>348</td>
<td>4.91</td>
<td>349</td>
<td>4.89</td>
<td>56</td>
<td>348</td>
<td>4.90</td>
<td>348</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>56</td>
<td>258</td>
<td>24.0</td>
<td>258</td>
<td>24.0</td>
<td>258</td>
<td>24.0</td>
<td>258</td>
<td>24.0</td>
<td>258</td>
<td>24.0</td>
</tr>
</tbody>
</table>

SPECspeed®2017_int_base = 11.5
SPECspeed®2017_int_peak = 11.8

Compiler Notes

The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler. The correct version of C/C++ compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux. The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux.

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,scatter"
LD_LIBRARY_PATH = 
"/mnt/ramdisk/cpu2017-ic19.1u1/lib/intel64:/mnt/ramdisk/cpu2017-ic19.1u1
 /je5.0.1-64"
MALLOC_CONF = "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.
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)
Dell Inc.  
PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)  

**SPEC CPU®2017 Integer Speed Result**  
Copyright 2017-2020 Standard Performance Evaluation Corporation  

**SPECspeed®2017_int_base = 11.5**  
**SPECspeed®2017_int_peak = 11.8**  

<table>
<thead>
<tr>
<th>CPU2017 License: 55</th>
<th>Test Date: Jun-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Jul-2020</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Apr-2020</td>
</tr>
</tbody>
</table>

---

**General Notes (Continued)**

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"  
jemalloc, a general purpose malloc implementation  
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5  

---

**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 disabled  
CPU Interconnect Bus Link Power Management disabled  
PCI ASPM L1 Link Power Management disabled  
UPI Prefetch disabled  
LLC Prefetch disabled  
Dead Line LLC Alloc enabled  
Directory AtoS disabled

Sysinfo program /mnt/ramdisk/cpu2017-ic19.1u1/bin/sysinfo  
Rev: r6365 of 2019-08-21 295195f888a3d7edbe6e46a485a0011  
running on user-pc.spa.lab Tue Jun 16 08:17:08 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) Gold 6238R CPU @ 2.20GHz  
2 "physical id"s (chips)  
56 "processors"
```
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

(Continued on next page)
Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

SPECspeed®2017_int_base = 11.5
SPECspeed®2017_int_peak = 11.8

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

Platform Notes (Continued)

cpu cores : 28
siblings : 28
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27 28 29 30
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27 28 29 30

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 56
On-line CPU(s) list: 0-55
Thread(s) per core: 1
Core(s) per socket: 28
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6238R CPU @ 2.20GHz
Stepping: 7
CPU MHz: 2085.747
CPU max MHz: 4000.0000
CPU min MHz: 1000.0000
BogoMIPS: 4400.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 39424K
NUMA node0 CPU(s):
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54
NUMA node1 CPU(s):
1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55
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 apic cpuid nonstop_tsc cpuid aperfmpref pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtrig 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 cdp_c3
invpcid_single intel_ppnin ssbd mba ibrs ibpb ibrs_enhanced tpr_shadow vmmx flexpriority ept vpid faqsbase tsc_adjust bmi1 hle avx2 smep bmi2  thrd_mmu_readrd rtm

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

Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

SPECspeed®2017_int_base = 11.5
SPECspeed®2017_int_peak = 11.8

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

Test Date: Jun-2020
Hardware Availability: Jul-2020
Software Availability: Apr-2020

Platform Notes (Continued)

/proc/cpuinfo cache data

    cache size : 39424 KB

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 48 50 52 54
    node 0 size: 385606 MB
    node 0 free: 380460 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 49 51 53 55
    node 1 size: 387040 MB
    node 1 free: 381358 MB
    node distances:
      node   0   1
      0:  10  21
      1:  21  10

From /proc/meminfo

    MemTotal:       791190492 kB
    HugePages_Total:       0
    Hugepagesize:       2048 kB

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

    os-release:
      NAME="Red Hat Enterprise Linux"
      VERSION="8.1 (Ootpa)"
      ID="rhel"
      ID_LIKE="fedora"
      VERSION_ID="8.1"
      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 user-pc.spa.lab 4.18.0-147.el8.x86_64 #1 SMP Thu Sep 26 15:52:44 UTC 2019 x86_64
    x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

    CVE-2018-3620 (L1 Terminal Fault):        Not affected
    Microarchitectural Data Sampling:        Not affected

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

- **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/swapgs barriers and __user pointer sanitation  
- **CVE-2017-5715 (Spectre variant 2):** Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling  

run-level 3 Jun 16 08:15 last=5

SPEC is set to: /mnt/ramdisk/cpu2017-ic19.1u1

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmpfs</td>
<td>tmpfs</td>
<td>225G</td>
<td>4.3G</td>
<td>221G</td>
<td>2%</td>
<td>/mnt/ramdisk</td>
</tr>
</tbody>
</table>

From /sys/devices/virtual/dmi/id

- **BIOS:** Dell Inc. 2.7.7 05/04/2020  
- **Vendor:** Dell Inc.  
- **Product:** PowerEdge R740xd  
- **Product Family:** PowerEdge  
- **Serial:** F5BMCS2

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:

- 19x 00AD00B300AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933  
- 1x 00AD063200AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933  
- 4x 00AD069D00AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933

(End of data from sysinfo program)

### Compiler Version Notes

```
==============================================================================
C       | 600.perlbench_s(base) 602.gcc_s(base, peak) 605.mcf_s(base, peak)  
| 625.x264_s(base, peak) 657.xz_s(base, peak)  
==============================================================================
```

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1  
NextGen Build 20200304  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

```
C       | 600.perlbench_s(peak)
```

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

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, 
Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

```
C   | 600.perlbench_s(base) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 
    | 625.x264_s(base, peak) 657.xz_s(base, peak)
```

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

```
C   | 600.perlbench_s(peak)
```

Intel(R) C Compiler for applications running on Intel(R) 64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

```
C++  | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 
    | 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)
```

Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1
NextGen Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

```
Fortran | 648.exchange2_s(base, peak)
```

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 
64, Version 19.1.1.217 Build 20200306
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc
Dell Inc. PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base = 11.5</th>
<th>SPECspeed®2017_int_peak = 11.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inc.</td>
<td>Dell Inc.</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Test Date:</td>
</tr>
<tr>
<td>Jun-2020</td>
<td>Jul-2020</td>
</tr>
<tr>
<td>CPU2017 License: 55</td>
<td>Software Availability: Apr-2020</td>
</tr>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Jul-2020</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td></td>
</tr>
</tbody>
</table>

### Base Compiler Invocation (Continued)

**Fortran benchmarks:**

ifort

### Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64  
602.gcc_s: -DSPEC_LP64  
605.mcf_s: -DSPEC_LP64  
620.omnetpp_s: -DSPEC_LP64  
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX  
625.x264_s: -DSPEC_LP64  
631.deepsjeng_s: -DSPEC_LP64  
641.leela_s: -DSPEC_LP64  
648.exchange2_s: -DSPEC_LP64  
657.xz_s: -DSPEC_LP64

### Base Optimization Flags

**C benchmarks:**

-m64 -qnextgen -std=c11  
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs  
-xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops  
-fuse-ld=gold -qopt-mem-layout-trans=4 -fopenmp -DSPEC_OPENMP  
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

**C++ benchmarks:**

-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries  
-Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse  
-funroll-loops -fuse-ld=gold -qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin  
-lqkmalloc

**Fortran benchmarks:**

-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -xCORE-AVX512  
-O3 -ipo -no-prec-div -qopt-mem-layout-trans=4  
-nostandard-realloc-lhs -align array32byte  
-mbranches-within-32B-boundaries
**Dell Inc.**

PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

---

**SPEC CPU®2017 Integer Speed Result**

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<table>
<thead>
<tr>
<th>CPU2017 License: 55</th>
<th>Test Date: Jun-2020</th>
</tr>
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<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Jul-2020</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Apr-2020</td>
</tr>
</tbody>
</table>

---

**SPECspeed®2017_int_base = 11.5**

**SPECspeed®2017_int_peak = 11.8**

---

**Peak Compiler Invocation**

C benchmarks: 
icc

C++ benchmarks: 
icpc

Fortran benchmarks: 
ifort

---

**Peak Portability Flags**

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64(*) -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

(*) Indicates a portability flag that was found in a non-portability variable.

---

**Peak Optimization Flags**

C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2)
-xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -fno-strict-overflow
-mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

602.gcc_s: -m64 -gnextgen -std=c11 -fuse-ld=gold
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -fto
-o fastest(pass 1) -O3 -ffast-math -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

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

Dell Inc.
PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

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Peak Optimization Flags (Continued)

```
605.mcf_s: basepeak = yes

625.x264_s: -m64 -qnextgen -std=c11
-Wl,-plugin-opt=--x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -flto -O3 -ffast-math
-fuse-ld=gold -qopt-mem-layout-trans=4 -fno-alias
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

657.xz_s: basepeak = yes

C++ benchmarks:
620.omnetpp_s: basepeak = yes
623.xalancbmk_s: basepeak = yes
631.deepsjeng_s: basepeak = yes
641.leela_s: basepeak = yes

Fortran benchmarks:
648.exchange2_s: 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-ic19.1u1-official-linux64_revA.xml

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

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