### Dell Inc.

**PowerEdge R740xd (Intel Xeon Gold 6240R, 2.40 GHz)**

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 259</th>
<th>SPECrate®2017_int_peak = 272</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inc.</td>
<td>Dell Inc.</td>
</tr>
</tbody>
</table>

#### SPEC CPU®2017 Integer Rate Result

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Dell Inc.</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Feb-2020</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Oct-2019</td>
</tr>
</tbody>
</table>

#### Hardware

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 6240R</td>
</tr>
<tr>
<td>Max MHz</td>
<td>4000</td>
</tr>
<tr>
<td>Nominal</td>
<td>2400</td>
</tr>
<tr>
<td>Enabled</td>
<td>48 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>35.75 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 2933)</td>
</tr>
<tr>
<td>Storage</td>
<td>1 x 960 GB SATA SSD</td>
</tr>
<tr>
<td>Other</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Software

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Ubuntu 18.04.2 LTS</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 19.0.4.227 of Intel C/C++ Compiler Build 20190416 for Linux; Fortran: Version 19.0.4.227 of Intel Fortran Compiler Build 20190416 for Linux</td>
</tr>
<tr>
<td>Parallel</td>
<td>No</td>
</tr>
<tr>
<td>Firmware</td>
<td>Version 2.5.3 released Dec-2019</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 5 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Power Management</td>
<td>BIOS set to prefer performance at the cost of additional power usage</td>
</tr>
</tbody>
</table>

### Test Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_r</td>
<td>244</td>
<td>272</td>
</tr>
<tr>
<td>gcc_r</td>
<td>211</td>
<td>259</td>
</tr>
<tr>
<td>mcf_r</td>
<td>152</td>
<td>158</td>
</tr>
<tr>
<td>omnetpp_r</td>
<td>327</td>
<td>327</td>
</tr>
<tr>
<td>xalancbmk_r</td>
<td>285</td>
<td>308</td>
</tr>
<tr>
<td>x264_r</td>
<td>566</td>
<td>588</td>
</tr>
<tr>
<td>deepsjeng_r</td>
<td>217</td>
<td>217</td>
</tr>
<tr>
<td>leela_r</td>
<td>217</td>
<td>217</td>
</tr>
<tr>
<td>exchange2_r</td>
<td>536</td>
<td>536</td>
</tr>
<tr>
<td>xz_r</td>
<td>164</td>
<td>164</td>
</tr>
</tbody>
</table>

**Conclusion:**

The test results indicate that the Dell Inc. PowerEdge R740xd with an Intel Xeon Gold 6240R processor, running Ubuntu 18.04.2 LTS and tested in Jan-2020, achieves a SPECrate®2017_int_base of 259 and a SPECrate®2017_int_peak of 272.
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</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>Base</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500.perlbench_r</td>
<td>96</td>
<td>777</td>
<td>197</td>
<td>780</td>
<td>196</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>224</td>
<td>259</td>
<td>158</td>
</tr>
<tr>
<td>502gcc_r</td>
<td>96</td>
<td>636</td>
<td>214</td>
<td>644</td>
<td>211</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>259</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>96</td>
<td>475</td>
<td>327</td>
<td>475</td>
<td>327</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>272</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>96</td>
<td>831</td>
<td>152</td>
<td>811</td>
<td>155</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>155</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>96</td>
<td>356</td>
<td>285</td>
<td>354</td>
<td>286</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>286</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>96</td>
<td>297</td>
<td>566</td>
<td>296</td>
<td>568</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>568</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>96</td>
<td>505</td>
<td>218</td>
<td>506</td>
<td>217</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>217</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>96</td>
<td>732</td>
<td>217</td>
<td>734</td>
<td>217</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>217</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>96</td>
<td>469</td>
<td>536</td>
<td>469</td>
<td>536</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>536</td>
<td>272</td>
<td>158</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>96</td>
<td>632</td>
<td>164</td>
<td>632</td>
<td>164</td>
<td>272</td>
<td>4</td>
<td>96</td>
<td>164</td>
<td>272</td>
<td>158</td>
</tr>
</tbody>
</table>

### 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 = "/home/cpu2017/lib/intel64:/home/cpu2017/lib/ia32:/home/cpu2017/je5.0.1-32"
```

### General Notes

Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5

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)
Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6240R, 2.40 GHz)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

SPEC®2017_int_base = 259
SPEC®2017_int_peak = 272

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

General Notes (Continued)

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

Platform Notes

BIOS settings:
Sub NUMA Cluster enabled
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

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7ed5e1e6e46a485a0011
running on intel-sut Sat Jan 11 16:46:54 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 6240R CPU @ 2.40GHz
  2 "physical id"s (chips)
  96 "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 : 48
physical 0: cores 0 1 2 3 4 5 6 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 25 26 27 28 29

(Continued on next page)
Platform Notes (Continued)

From lscpu:

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 96
On-line CPU(s) list: 0-95
Thread(s) per core: 2
Core(s) per socket: 24
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6240R CPU @ 2.40GHz
Stepping: 7
CPU MHz: 3637.262
BogoMIPS: 4800.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 36608K
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
NUMA node1 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
NUMA node2 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
NUMA node3 CPU(s):
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 rdopt
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
xptr pdcm pccd 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 l3
invpcid_single intel_pni ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi
flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 ibrsm invpcid rtm
cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd
avx512bw avx512vl xsavesopt xsavec xgetbv1 xsavec cqm_llc cqm_occupp llc cqm_mbb_total
cqm_mbb_local dtherm ida arat pln pts pku ospke avx512_vnni md_clear flush_l1d
arch_capabilities

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a

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

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
   node 0 size: 95304 MB
   node 0 free: 94953 MB
   node 1 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
   node 1 size: 96763 MB
   node 1 free: 96525 MB
   node 2 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
   node 2 size: 96763 MB
   node 2 free: 96513 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
   node 3 size: 96740 MB
   node 3 free: 96503 MB

node distances:
   node 0 1 2 3
   0: 10 21 11 21
   1: 21 10 21 11
   2: 11 21 10 21
   3: 21 11 21 10

From /proc/meminfo
   MemTotal: 394826368 kB
   HugePages_Total: 0
   Hugepagesize: 2048 kB
   /usr/bin/lsb_release -d
     Ubuntu 18.04.2 LTS
   From /etc/*release* /etc/*version*
     debian_version: buster/sid
     os-release:
       NAME="Ubuntu"
       VERSION="18.04.2 LTS (Bionic Beaver)"
       ID=ubuntu
       ID_LIKE=debian
       PRETTY_NAME="Ubuntu 18.04.2 LTS"
       VERSION_ID="18.04"
       HOME_URL="https://www.ubuntu.com/"
       SUPPORT_URL="https://help.ubuntu.com/"

uname -a:
   Linux intel-sut 4.15.0-65-generic #74-Ubuntu SMP Tue Sep 17 17:06:04 UTC 2019 x86_64
   x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

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

**Dell Inc.**

Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6240R, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>259</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak</td>
<td>272</td>
</tr>
</tbody>
</table>

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

**Test Date:** Jan-2020  
**Hardware Availability:** Feb-2020  
**Software Availability:** Oct-2019

**Platform Notes (Continued)**

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

**run-level 5 Jan 11 16:39**

**SPEC is set to:** /home/cpu2017  
**Filesystem**  
<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>ext4</td>
<td>439G</td>
<td>44G</td>
<td>374G</td>
<td>11%</td>
<td>/</td>
</tr>
</tbody>
</table>

**From /sys/devices/virtual/dmi/id**  
**BIOS:** Dell Inc. 2.5.3 12/09/2019  
**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:**  
- 12x 002C069D002C 18ASF2G72PDZ-2G9E1 16 GB 2 rank 2933  
- 7x 00AD00B300AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933  
- 5x 00AD063200AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933

(End of data from sysinfo program)

**Compiler Version Notes**

```
==============================================================================
C       | 502.gcc_r(peak)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==============================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)
```

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

<table>
<thead>
<tr>
<th>525.x264_r(base, peak) 557.xz_r(base, peak)</th>
<th></th>
</tr>
</thead>
</table>

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, 
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

<table>
<thead>
<tr>
<th>502.gcc_r(peak)</th>
<th></th>
</tr>
</thead>
</table>

Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

| 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 
<table>
<thead>
<tr>
<th>525.x264_r(base, peak) 557.xz_r(base, peak)</th>
</tr>
</thead>
</table>

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, 
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

<table>
<thead>
<tr>
<th>523.xalancbmk_r(peak)</th>
<th></th>
</tr>
</thead>
</table>

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

| 520.omnetpp_r(base, peak) 523.xalancbmk_r(base) 
<table>
<thead>
<tr>
<th>531.deepsjeng_r(base, peak) 541.leela_r(base, peak)</th>
</tr>
</thead>
</table>

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64, 
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

<table>
<thead>
<tr>
<th>523.xalancbmk_r(peak)</th>
<th></th>
</tr>
</thead>
</table>

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

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

Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6240R, 2.40 GHz)

SPECrater®2017_int_base = 259
SPECrater®2017_int_peak = 272

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

Test Date: Jan-2020
Hardware Availability: Feb-2020
Software Availability: Oct-2019

Compiler Version Notes (Continued)

==============================================================================
C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base)
        | 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)
==============================================================================
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

==============================================================================
Fortran | 548.exchange2_r(base, peak)
==============================================================================
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.zx_r: -DSPEC_LP64
Dell Inc.  
PowerEdge R740xd (Intel Xeon Gold 6240R, 2.40 GHz)  

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 259</th>
<th>SPECrate®2017_int_peak = 272</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2017 License: 55</td>
<td>Test Date: Jan-2020</td>
</tr>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Feb-2020</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Oct-2019</td>
</tr>
</tbody>
</table>

Base Optimization Flags

C benchmarks:
- `-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
- `-qopt-mem-layout-trans=4`
- `-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64`
- `-lkmalloc`

C++ benchmarks:
- `-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
- `-qopt-mem-layout-trans=4`
- `-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64`
- `-lkmalloc`

Fortran benchmarks:
- `-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div`
- `-qopt-mem-layout-trans=4` `-nostandard-realloc-lhs -align array32byte`
- `-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64`
- `-lkmalloc`

Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m64 -std=c11`


C++ benchmarks (except as noted below):
`icpc -m64`

523.xmlns_r: `icpc -m32 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/ia32_lin`

Fortran benchmarks:
`ifort -m64`

Peak Portability Flags

500.perlbench_r: `-DSPEC_LP64 -DSPEC_LINUX_X64`
502.gcc_r: `-D_FILE_OFFSET_BITS=64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-D_FILE_OFFSET_BITS=64 -DSPEC_LINUX`
525.x264_r: `-DSPEC_LP64`

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

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Gold 6240R, 2.40 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>259</td>
<td>272</td>
</tr>
</tbody>
</table>

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

### Peak Portability Flags (Continued)

531.deepsjeng_r: -DSPEC_LP64  
541.leela_r: -DSPEC_LP64  
548.exchange2_r: -DSPEC_LP64  
557.xz_r: -DSPEC_LP64

### Peak Optimization Flags

**C benchmarks:**

500.perlbench_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-fno-strict-overflow  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64  
-lqkmalloc

502.gcc_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-L/usr/local/je5.0.1-32/lib -ljemalloc

505.mcf_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64  
-lqkmalloc

525.x264_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-fno-alias  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64  
-lqkmalloc

557.xz_r: basepeak = yes

**C++ benchmarks:**

520.omnetpp_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64  
-lqkmalloc

523.xalancbmkker_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-L/usr/local/je5.0.1-32/lib -ljemalloc

531.deepsjeng_r: basepeak = yes

(Continued on next page)
Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6240R, 2.40 GHz)

SPECrate®2017_int_base = 259
SPECrate®2017_int_peak = 272

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

Test Date: Jan-2020
Hardware Availability: Feb-2020
Software Availability: Oct-2019

Peak Optimization Flags (Continued)

541.leela_r: Same as 520.omnetpp_r

Fortran benchmarks:

548.exchange2_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:

SPEC CPU and SPECrate 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®2017 v1.1.0 on 2020-01-11 11:46:53-0500.
Originally published on 2020-02-29.