## SPEC CPU®2017 Integer Rate Result

**Dell Inc.**

PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>309</td>
<td>322</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Gold 6248R
- **Max MHz:** 4000
- **Nominal:** 3000
- **Enabled:** 48 cores, 2 chips, 2 threads/core
- **Orderable:** 1.2 chips
- **Cache L1:** 32 KB I + 32 KB D on chip per core
- **L2:** 1 MB I+D on chip per core
- **L3:** 35.75 MB I+D on chip per chip
- **Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2933V-R, running at 2933)
- **Storage:** 1 x 960 GB SATA SSD
- **Other:** None

### Software

- **OS:** SUSE Linux Enterprise Server 15 SP1
- **Compiler:** 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
- **Parallel:** No
- **Firmware:** Version 2.5.4 released Jan-2020
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 32/64-bit
- **Other:** jemalloc memory allocator V5.0.1
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage

### Test Details

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

### Benchmarks

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_r</td>
<td>96</td>
<td>233</td>
<td>267</td>
</tr>
<tr>
<td>gcc_r</td>
<td>96</td>
<td>246</td>
<td>290</td>
</tr>
<tr>
<td>mcf_r</td>
<td>96</td>
<td>191</td>
<td>191</td>
</tr>
<tr>
<td>omnetpp_r</td>
<td>96</td>
<td>324</td>
<td>383</td>
</tr>
<tr>
<td>xalancbmk_r</td>
<td>96</td>
<td>358</td>
<td>384</td>
</tr>
<tr>
<td>x264_r</td>
<td>96</td>
<td>669</td>
<td>686</td>
</tr>
<tr>
<td>deepsjeng_r</td>
<td>96</td>
<td>269</td>
<td>269</td>
</tr>
<tr>
<td>leela_r</td>
<td>96</td>
<td>254</td>
<td>254</td>
</tr>
<tr>
<td>exchange2_r</td>
<td>96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xz_r</td>
<td>96</td>
<td>202</td>
<td></td>
</tr>
</tbody>
</table>
Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

SPECrater®2017_int_base = 309
SPECrater®2017_int_peak = 322

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>500.perbench_r</td>
<td>96</td>
<td>650</td>
<td>235</td>
<td>656</td>
<td>233</td>
<td>96</td>
<td>571</td>
<td>267</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>502gcc_r</td>
<td>96</td>
<td>553</td>
<td>246</td>
<td>552</td>
<td>246</td>
<td>96</td>
<td>469</td>
<td>290</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>96</td>
<td>403</td>
<td>385</td>
<td>405</td>
<td>383</td>
<td>96</td>
<td>403</td>
<td>385</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>96</td>
<td>659</td>
<td>191</td>
<td>658</td>
<td>191</td>
<td>96</td>
<td>659</td>
<td>191</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>96</td>
<td>310</td>
<td>327</td>
<td>313</td>
<td>324</td>
<td>96</td>
<td>283</td>
<td>358</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
<td>96</td>
<td>248</td>
<td>679</td>
<td>251</td>
<td>669</td>
<td>96</td>
<td>245</td>
<td>687</td>
<td></td>
<td>254</td>
<td></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>96</td>
<td>409</td>
<td>269</td>
<td>409</td>
<td>269</td>
<td>96</td>
<td>408</td>
<td>269</td>
<td></td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td>96</td>
<td>620</td>
<td>256</td>
<td>626</td>
<td>254</td>
<td>96</td>
<td>620</td>
<td>256</td>
<td></td>
<td>262</td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>96</td>
<td>401</td>
<td>627</td>
<td>401</td>
<td>627</td>
<td>96</td>
<td>401</td>
<td>627</td>
<td></td>
<td>401</td>
<td></td>
</tr>
<tr>
<td>557.xz_r</td>
<td>96</td>
<td>512</td>
<td>202</td>
<td>512</td>
<td>203</td>
<td>96</td>
<td>512</td>
<td>202</td>
<td></td>
<td>512</td>
<td></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)

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

Dell Inc. PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

Dell Inc.

SPECrate®2017_int_base = 309
SPECrate®2017_int_peak = 322

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

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
UPI Prefetch enabled
LLC Prefetch disabled
Dead Line LLC Alloc enabled
Directory AtoS disabled
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011
running on linux-g3ob Tue Jan 21 16:26:56 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 6248R CPU @ 3.00GHz
  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

(Continued on next page)
SPECCPU®2017 Integer Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

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

SPECrate®2017_int_base = 309
SPECrate®2017_int_peak = 322

Platform Notes (Continued)

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

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 46 bits physical, 48 bits virtual
CPU(s): 96
On-line CPU(s) list: 0-95
Thread per core: 2
Core per socket: 24
Socket: 2
NUMA node: 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6248R CPU @ 3.00GHz
Stepping: 7
CPU MHz: 3000.000
BogoMIPS: 6000.00
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 tkm mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtsscp 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 xtrm 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_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 3dnow invpcid rtm cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsavesopt xsaveopt xsaves xsavec xgetbv1 xsave cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local dtherm ida arat pln pts pku ospke avx512_vnni md_clear flush_l1d arch_capabilities

(Continued on next page)
Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

**SPEC CPU®2017 Integer Rate Result**

**SPECrate®2017_int_base = 309**

**SPECrate®2017_int_peak = 322**

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

---

**Platform Notes (Continued)**

/proc/cpuinfo cache data

- cache size : 36608 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
  - node 0 size: 95303 MB
  - node 0 free: 94894 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: 96733 MB
  - node 1 free: 96559 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: 96502 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: 96761 MB
  - node 3 free: 96486 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: 394816452 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

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

- os-release:
  - NAME="SLES"
  - VERSION="15-SP1"
  - VERSION_ID="15.1"
  - PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
  - ID="sles"
  - ID_LIKE="suse"
  - ANSI_COLOR="0;32"
  - CPE_NAME="cpe:/o:suse:sles:15:sp1"

- uname -a:
  - Linux linux-g3ob 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019 (8fba516)
  - x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

(Continued on next page)
Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc. SPECrate®2017_int_base = 309
SPECrate®2017_int_peak = 322

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

Test Date: Jan-2020
Hardware Availability: Feb-2020
Software Availability: Jun-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: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

run-level 3 Jan 21 10:16 last=5

SPEC is set to: /home/cpu2017

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 440G 48G 393G 11% /

From /sys/devices/virtual/dmi/id
BIOS: Dell Inc. 2.5.4 01/13/2020
Vendor: Dell Inc.
Product: PowerEdge R740xd
Product Family: PowerEdge
Serial: F5BLC2S2

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:
2x 002C069D002C 18ASF2G72PDZ-2G9E1 16 GB 2 rank 2933
7x 00AD00B300AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933
3x 00AD063200AD HMA82GR7CJR8N-WM 16 GB 2 rank 2933
12x 00AD069D00AD 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.
==============================================================================

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

Dell Inc.

PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

SPECrater2017_int_base = 309

SPECrater2017_int_peak = 322

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

Compiler Version Notes (Continued)

|    | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak) 557.xz_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. |
|    | 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. |
|    | 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. |
|    | 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. |
|    | 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)
Dell Inc., PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

SPECraten®2017_int_base = 309
SPECraten®2017_int_peak = 322

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

Compiler Version Notes (Continued)

Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

------------------------------------------------------------------------------
| C++ | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) |
|     | 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.xz_r: -DSPEC_LP64
SPEC CPU®2017 Integer Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

Dell Inc.
PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

SPECrater®2017_int_base = 309
SPECrater®2017_int_peak = 322

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

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
-lqkmalloc

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
-lqkmalloc

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
-lqkmalloc

Peak Compiler Invocation

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

502.gcc_r.icc -m32 -std=c11 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/ia32_lin

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

523.xalancbmk_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 6248R, 3.00 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 309</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak = 322</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:** Jun-2019

### Peak Portability Flags (Continued)

531.deepsjeng_r: -DSPEC_LP64  
541.leea_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 -03 -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 -03 -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 -03 -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 -03 -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 -03 -no-prec-div  
  -qopt-mem-layout-trans=4  
  -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64  
  -lqkmalloc

- 523.xalancbmk_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
  -xCORE-AVX512 -03 -no-prec-div -qopt-mem-layout-trans=4  
  -L/usr/local/je5.0.1-32/lib -ljemalloc

- 531.deepsjeng_r: Same as 520.omnetpp_r

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

## Dell Inc.

### PowerEdge R740xd (Intel Xeon Gold 6248R, 3.00 GHz)

<table>
<thead>
<tr>
<th>SPECrate®2017 int_base</th>
<th>309</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017 int_peak</td>
<td>322</td>
</tr>
</tbody>
</table>

<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>Test Date:</td>
<td>Jan-2020</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Feb-2020</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Jun-2019</td>
</tr>
</tbody>
</table>

### Peak Optimization Flags (Continued)

541.leela_r: basepeak = yes

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`
- `-lqkmalloc`

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 2020-01-21 17:26:56-0500.
Originally published on 2020-02-29.