Dell Inc.

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

SPECraten®2017_int_base = 289
SPECraten®2017_int_peak = 304

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

Test Date: Jan-2020

500.perlbench_r 112
502.gcc_r 112
505.mcf_r 112
520.omnetpp_r 112
523.xalancbmk_r 112
525.x264_r 112
531.deepsjeng_r 112
541.leela_r 112
548.exchange2_r 112
557.xz_r 112

Copies 0 | 30.0 | 60.0 | 90.0 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 | 390 | 420 | 450 | 480 | 510 | 540 | 570 | 600 | 630 | 660 | 690 | 720

500.perlbench_r 219
502.gcc_r 233
505.mcf_r 278
520.omnetpp_r 188
523.xalancbmk_r 296
525.x264_r 612
531.deepsjeng_r 250
541.leela_r 236
548.exchange2_r 582
557.xz_r 196

SPECraten®2017_int_base (289)
SPECraten®2017_int_peak (304)

Hardware

CPU Name: Intel Xeon Gold 6238R
Max MHz: 4000
Nominal: 2200
Enabled: 56 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: 38.5 MB I+D on chip per chip
Other: None
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 Enteprise 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
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>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></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.perbench_r</td>
<td>112</td>
<td>812</td>
<td>220</td>
<td>815</td>
<td>219</td>
<td></td>
<td></td>
<td>112</td>
<td>708</td>
<td>252</td>
<td>709</td>
<td>251</td>
<td></td>
<td></td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>112</td>
<td>677</td>
<td>234</td>
<td>681</td>
<td>233</td>
<td></td>
<td></td>
<td>112</td>
<td>567</td>
<td>280</td>
<td>571</td>
<td>278</td>
<td></td>
<td></td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>112</td>
<td>513</td>
<td>353</td>
<td>510</td>
<td>355</td>
<td></td>
<td></td>
<td>112</td>
<td>510</td>
<td>355</td>
<td>510</td>
<td>355</td>
<td></td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>112</td>
<td>764</td>
<td>192</td>
<td>782</td>
<td>188</td>
<td></td>
<td></td>
<td>112</td>
<td>773</td>
<td>190</td>
<td>770</td>
<td>191</td>
<td></td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>112</td>
<td>397</td>
<td>298</td>
<td>399</td>
<td>296</td>
<td></td>
<td></td>
<td>112</td>
<td>360</td>
<td>328</td>
<td>360</td>
<td>328</td>
<td></td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
<td>112</td>
<td>320</td>
<td>612</td>
<td>320</td>
<td>613</td>
<td></td>
<td></td>
<td>112</td>
<td>306</td>
<td>642</td>
<td>306</td>
<td>642</td>
<td></td>
<td></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>112</td>
<td>513</td>
<td>250</td>
<td>513</td>
<td>250</td>
<td></td>
<td></td>
<td>112</td>
<td>513</td>
<td>250</td>
<td>513</td>
<td>250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td>112</td>
<td>786</td>
<td>236</td>
<td>783</td>
<td>237</td>
<td></td>
<td></td>
<td>112</td>
<td>782</td>
<td>237</td>
<td>785</td>
<td>236</td>
<td></td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>112</td>
<td>504</td>
<td>582</td>
<td>504</td>
<td>583</td>
<td></td>
<td></td>
<td>112</td>
<td>504</td>
<td>582</td>
<td>504</td>
<td>583</td>
<td></td>
<td></td>
</tr>
<tr>
<td>557.xz_r</td>
<td>112</td>
<td>617</td>
<td>196</td>
<td>614</td>
<td>197</td>
<td></td>
<td></td>
<td>112</td>
<td>617</td>
<td>196</td>
<td>614</td>
<td>197</td>
<td></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)
Dell Inc.

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

SPEC CPU®2017 Integer Rate Result

SPECrate®2017_int_base = 289
SPECrate®2017_int_peak = 304

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

Test Date: Jan-2020
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

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edbb1e6e46a485a0011
running on linux-g3ob Tue Jan 14 14:30:08 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)
  112 "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 : 28
  siblings : 56
  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

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

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

SPECrate®2017_int_base = 289
SPECrate®2017_int_peak = 304

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)

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): 112
On-line CPU(s) list: 0-111
Thread(s) per core: 2
Core(s) per socket: 28
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel (R) Xeon (R) Gold 6238R CPU @ 2.20GHz
Stepping: 7
CPU MHz: 2200.000
BogoMIPS: 4400.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 39424K
NUMA node0 CPU(s):
  0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60,64,68,72,76,80,84,88,92,96,100,104,108
NUMA node1 CPU(s):
  1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77,81,85,89,93,97,101,105,109
NUMA node2 CPU(s):
  2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,66,70,74,78,82,86,90,94,98,102,106,110
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 rdtscp
  lm constant_tsc arch_perfmon pebs bts rep_good nopl 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 tsc_deadline_timer aes xsave
  avx f16c rdrand lahf_lm abm 3nowprefetch cpuid_fault epb cat_l3 cdp_c13
  invpcid_single intel_p科技创新 sbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnum
  flexpriority ept vpid fsgsbase tsc_adjust bm1 hle avx2 smep bmi2 erms invpcid rtm
cmq mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd
avx512bw avx512vl xsaveopt xsaves xsavec xgetbv1 xsaveev cqm_llc cqm_occup_llc cqm_mbmb_total
  cqm_mbmb_local dtherm ida arat pln pts pkp ospke avx512_vnni md_clear flush_lld
  arch_capabilities

/proc/cpuinfo cache data

(Continued on next page)
Dell Inc. PowerEdge R740xd (Intel Xeon Gold 6238R, 2.20 GHz)

SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

SPECRate®2017_int_base = 289
SPECRate®2017_int_peak = 304

Platform Notes (Continued)

cache size : 39424 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 96 100 104 108
node 0 size: 95302 MB
node 0 free: 94955 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 97 101 105 109
node 1 size: 96762 MB
node 1 free: 96584 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 98 102 106 110
node 2 size: 96733 MB
node 2 free: 96295 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 99 103 107 111
node 3 size: 96761 MB
node 3 free: 96578 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: 394813440 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

(Continued on next page)
Dell Inc.

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

**SPECrate®2017_int_base = 289**

**SPECrate®2017_int_peak = 304**

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

**Platform Notes (Continued)**

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

run-level 3 Jan 14 14:20 last=5

SPEC is set to: /home/cpu2017

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: F5BLCS2

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 18ASF2G72FDZ-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)
### Compiler Version Notes (Continued)

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

|        | 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.

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

|        | 523.xalancbmk_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.

|        | 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.

|        | 523.xalancbmk_r(peak)                                           |

(Continued on next page)
**Dell Inc.**

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

<table>
<thead>
<tr>
<th>SPEC CPU®2017 License: 55</th>
<th>Test Date: Jan-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Feb-2020</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Jun-2019</td>
</tr>
</tbody>
</table>

**SPECrate®2017_int_base = 289**
**SPECrate®2017_int_peak = 304**

### Compiler Version Notes (Continued)

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.

```plaintext
==============================================================================
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.

```plaintext
==============================================================================
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:
```plaintext
icc -m64 -std=c11
```

C++ benchmarks:
```plaintext
icpc -m64
```

Fortran benchmarks:
```plaintext
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

(Continued on next page)
Dell Inc.

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

SPECrates® 2017_int_base = 289
SPECrates® 2017_int_peak = 304

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

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

**Base Portability Flags (Continued)**

548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

**Base Optimization Flags**

C benchmarks:
- W1, -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:
- W1, -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:
- W1, -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

502gcc_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

523xalancbmk_r_icpc -m32 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/ia32_lin

Fortran benchmarks:
ifort -m64
Dell Inc.

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

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

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
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 -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/jce5.0.1-32/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

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

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

(Continued on next page)
Dell Inc.

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

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base = 289</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_int_peak = 304</td>
</tr>
</tbody>
</table>

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

**Peak Optimization Flags (Continued)**

```
523.xalancbmk_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

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 2020-01-14 15:30:07-0500.
Originally published on 2020-02-29.