### Dell Inc.

**PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)**

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<tr>
<th>Threads</th>
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<th>SPECspeed2017_int_peak = 7.78</th>
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<tr>
<td>625.x264_s 24</td>
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<tr>
<td>631.deepsjeng_s 24</td>
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<tr>
<td>641.leela_s 24</td>
<td></td>
<td></td>
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<tr>
<td>648.exchange2_s 24</td>
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<td></td>
</tr>
<tr>
<td>657.xz_s 24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Hardware

**CPU Name:** Intel Xeon Gold 5118  
**Max MHz.:** 3200  
**Nominal:** 2300  
**Enabled:** 24 cores, 2 chips  
**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:** 16.5 MB I+D on chip per chip  
**Memory:** 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R, running at 2400)  
**Storage:** 1 x 250 GB M.2 SATA SSD  
**Other:** None

#### Software

**OS:** SUSE Linux Enterprise Server 12 SP3  
**kernel 4.4.114-94.11-default**  
**Compiler:** C/C++: Version 18.0.2.20180210 of Intel C/C++ Compiler for Linux; Fortran: Version 18.0.2.20180210 of Intel Fortran Compiler for Linux  
**Parallel:** Yes  
**Firmware:** Version 1.0.3 released Oct-2018  
**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
### Dell Inc.

**PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)**

**SPECspeed2017_int_base = 7.55**  
**SPECspeed2017_int_peak = 7.78**

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<td>334</td>
<td>18.5</td>
<td>331</td>
<td>18.7</td>
</tr>
</tbody>
</table>

**Results 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"

### General Notes

Environment variables set by runcpu before the start of the run:

```
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"
OMP_STACKSIZE = "192M"
```

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM  
memory using Redhat Enterprise Linux 7.4  
Yes: 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) 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
```

jemalloc, a general purpose malloc implementation  
built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5  
Dell Inc.

PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
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<tr>
<td>SPECspeed2017_int_peak</td>
<td>7.78</td>
</tr>
</tbody>
</table>

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

Test Date: Nov-2018
Hardware Availability: Dec-2018
Software Availability: Feb-2018

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 disabled
Logical Processor disabled
CPU Interconnect Bus Link Power Management disabled
PCI ASPM L1 Link Power Management disabled
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on linux-m8ku Mon Nov 19 10:04:15 2018

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 5118 CPU @ 2.30GHz
- 2 "physical id"s (chips)
- 24 "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: 12
  - siblings: 12
  - physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13
  - physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13

From lscpu:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- CPU(s): 24
- On-line CPU(s) list: 0-23
- Thread(s) per core: 1
- Core(s) per socket: 12
- Socket(s): 2
- NUMA node(s): 2
- Vendor ID: GenuineIntel
- CPU family: 6
- Model: 85
- Model name: Intel(R) Xeon(R) Gold 5118 CPU @ 2.30GHz
- Stepping: 4

(Continued on next page)
SPEC CPU2017 Integer Speed Result

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Dell Inc.

PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)

SPECspeed2017_int_base = 7.55
SPECspeed2017_int_peak = 7.78

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

Test Date: Nov-2018
Hardware Availability: Dec-2018
Software Availability: Feb-2018

Platform Notes (Continued)

CPU MHz: 2294.626
BogoMIPS: 4589.25
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 16896K
NUMA node0 CPU(s): 0,2,4,6,8,10,12,14,16,18,20,22
NUMA node1 CPU(s): 1,3,5,7,9,11,13,15,17,19,21,23
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 ntop tscBeauty nonstop_tsc
aperfmon perfmon pebs bts rep_good ntop tscBeauty nonstop_tsc
apicperf perf perfmon pebs bts rep_good ntop tscBeauty nonstop_tsc
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 ntop tscBeauty nonstop_tsc
apicperf perf perfmon pebs bts rep_good ntop tscBeauty nonstop_tsc
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 ntop tscBeauty nonstop_tsc
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
node 0 size: 95285 MB
node 0 free: 94918 MB
node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23
node 1 size: 96749 MB
node 1 free: 96354 MB
node distances:
node 0 1
0: 10 21
1: 21 10

From /proc/meminfo
MemTotal: 196643524 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP3

From /etc/*release* /etc/*version*
SuSE-release:

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

**PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)**

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

**Test Date:** Nov-2018  
**Hardware Availability:** Dec-2018  
**Software Availability:** Feb-2018

**Platform Notes (Continued)**

SUSE Linux Enterprise Server 12 (x86_64)  
VERSION = 12  
PATCHLEVEL = 3  

# This file is deprecated and will be removed in a future service pack or release.  
# Please check /etc/os-release for details about this release.

```bash
os-release:
NAME="SLES"
VERSION="12-SP3"
VERSION_ID="12.3"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp3"
```

```bash
uname -a:
Linux linux-m8ku 4.4.114-94.11-default #1 SMP Thu Feb 1 19:28:26 UTC 2018 (4309ff9)
x86_64 x86_64 x86_64 GNU/Linux
```

**Kernel self-reported vulnerability status:**

-CVE-2017-5754 (Meltdown): Mitigation: PTI  
-CVE-2017-5753 (Spectre variant 1): Mitigation: Barriers  
-CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS+IBPB

**run-level 3 Nov 19 09:47 last=5**

**SPEC is set to:** /home/cpu2017

```
Filesystem  Type  Size  Used Avail Use% Mounted on  
/dev/sdz4   xfs   182G  4.0G  178G   3% /home
```

**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.**

**BIOS Dell Inc. 1.0.3 10/25/2018**

**Memory:**

- 12x 002C04B3002C 18ASF2G72PD2-2G6E1 16 GB 2 rank 2666, configured at 2400  
- 4x Not Specified Not Specified

(End of data from sysinfo program)

### Compiler Version Notes

```bash
CC  600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base)  
657.xz_s(base)
```

(Continued on next page)
Dell Inc.
PowerEdge R740xd2 (K Intel Xeon Gold 5118, 2.30GHz)

SPEC CPU2017 Integer Speed Result

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Dell Inc.

PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)

SPECspeed2017_int_base = 7.55
SPECspeed2017_int_peak = 7.78

Compiler Version Notes (Continued)

icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
CC 600.perlbench_s(peak) 602.gcc_s(peak) 605.mcf_s(peak) 625.x264_s(peak)
657.xz_s(peak)

icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
641.leela_s(base)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

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icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
FC 648.exchange2_s(base)

ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
FC 648.exchange2_s(peak)

ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
SPEC CPU2017 Integer Speed Result

Dell Inc.

PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)

SPECspeed2017_int_base = 7.55
SPECspeed2017_int_peak = 7.78

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: Nov-2018
Hardware Availability: Dec-2018
Software Availability: Feb-2018

Base Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

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:
-W1,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:
-W1,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

Fortran benchmarks:
-W1,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs
-L/usr/local/je5.0.1-64/lib -ljemalloc
# SPEC CPU2017 Integer Speed Result

## Dell Inc.

PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)

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**CPU2017 License:** 55  
**Test Date:** Nov-2018  
**Test Sponsor:** Dell Inc.  
**Hardware Availability:** Dec-2018  
**Tested by:** Dell Inc.  
**Software Availability:** Feb-2018

### Peak Compiler Invocation

**C benchmarks:**

```
icc -m64 -std=c11
```

**C++ benchmarks (except as noted below):**

```
icpc -m64
```

623.xalancbmk: icpc -m32 -L/home/prasadj/specdev/IC18u2_Internal/lin_18_0_20180210/compiler/lib/ia32_lin

**Fortran benchmarks:**

```
ifort -m64
```

### Peak 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: -D_FILE_OFFSET_BITS=64 -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

### Peak Optimization Flags

**C benchmarks:**

```
600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2  
-xCORE-AVX512 -qopt-prefetch -ipo -O3  
-qopt-mem-layout-trans=3 -no-prec-div  
-DSPEC_SUPPRESS_OPENMP -gopenmp -DSPEC_OPENMP  
-fno-strict-overflow -L/usr/local/jemalloc -ljemalloc
```

**C++ benchmarks:**

```
602.gcc_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2  
-xCORE-AVX512 -qopt-prefetch -ipo -O3  
-qopt-mem-layout-trans=3 -no-prec-div  
-DSPEC_SUPPRESS_OPENMP -gopenmp -DSPEC_OPENMP  
-L/usr/local/jemalloc -ljemalloc
```

(Continued on next page)
## SPEC CPU2017 Integer Speed Result

### Dell Inc.

**PowerEdge R740xd2 (Intel Xeon Gold 5118, 2.30GHz)**

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**Software Availability:** Feb-2018

---

### Peak Optimization Flags (Continued)

#### C++ benchmarks:

- **605.mcf_s:** `-Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch -qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -gopenmp -DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc`

- **625.x264_s:** `basepeak = yes`

- **657.xz_s:** `Same as 602.gcc_s`

#### C++ benchmarks:

- **620.omnetpp_s:** `basepeak = yes`

- **623.xalancbmk_s:** `-Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch -qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -gopenmp -DSPEC_OPENMP -L/usr/local/je5.0.1-32/lib -ljemalloc`

- **631.deepsjeng_s:** `basepeak = yes`

- **641.leela_s:** `-Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3 -no-prec-div -qopt-prefetch -qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -gopenmp -DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc`

#### 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:


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

Tested with SPEC CPU2017 v1.0.5 on 2018-11-19 11:04:14-0500.
Report generated on 2018-12-26 13:02:32 by CPU2017 PDF formatter v6067.
Originally published on 2018-12-25.