### Dell Inc.

**PowerEdge M640 (Intel Xeon Platinum 8153, 2.00Ghz)**

<table>
<thead>
<tr>
<th>SPECrate2017_int_base</th>
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<td>138</td>
<td>Dell Inc.</td>
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</tbody>
</table>

**SPECRate2017_int_peak** = Not Run

**CPU2017 License**: 55  
**Test Sponsor**: Dell Inc.  
**Tested by**: Dell Inc.  
**Test Date**: Nov-2017  
**Hardware Availability**: Sep-2017  
**Software Availability**: Sep-2017

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#### Hardware

- **CPU Name**: Intel Xeon Platinum 8153  
- **Max MHz.**: 2800  
- **Nominal**: 2000  
- **Enabled**: 32 cores, 2 chips, 2 threads/core  
- **Orderable**: 1,2 chips  
- **Cache L1**: 32 KB I + 32 KB D on chip per core  
- **Cache L2**: 1 MB I+D on chip per core  
- **Cache L3**: 22 MB I+D on chip per chip  
- **Other**: None  
- **Memory**: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)  
- **Storage**: 1 x 960 GB SATA SSD  
- **Other**: None

#### Software

- **OS**: SUSE Linux Enterprise Server 12 SP3 (x86_64)  
  4.4.70-2-default  
- **Compiler**: C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux;  
  Fortran: Version 18.0.0.128 of Intel Fortran Compiler for Linux  
- **Parallel**: No  
- **Firmware**: Version 1.0.0 released Aug-2017  
- **File System**: btrfs  
- **System State**: Run level 3 (multi-user)  
- **Base Pointers**: 64-bit  
- **Peak Pointers**: 32/64-bit  
- **Other**: jemalloc: jemalloc memory allocator library V5.0.1;
Dell Inc. PowerEdge M640 (Intel Xeon Platinum 8153, 2.00Ghz) SPECrate2017_int_base = 138
SPECrate2017_int_peak = Not Run

Results Table

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<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tr>
<td>500.perlbench_r</td>
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<td>941</td>
<td>108</td>
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<td>615</td>
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</tr>
<tr>
<td>541.leela_r</td>
<td>64</td>
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<tr>
<td>548.exchange2_r</td>
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<td>651</td>
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<tr>
<td>557.xz_r</td>
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<td>95.6</td>
<td>721</td>
<td>95.9</td>
</tr>
</tbody>
</table>

SPECrate2017_int_base = 138
SPECrate2017_int_peak = Not Run

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

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"

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

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.4
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: configured and built at default for
32bit (i686) and 64bit (x86_64) targets;
jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5;

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

**Dell Inc.**

**PowerEdge M640 (Intel Xeon Platinum 8153, 2.00Ghz)**

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<tr>
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| SPECrate2017_int_base = 138 | SPECrate2017_int_peak = Not Run |

### General Notes (Continued)

jemalloc: sources available via jemalloc.net

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

No: 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.

No: 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.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, http://www.spec.org/osg/policy.html

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

### Platform Notes

BIOS settings:
- Virtualization Technology disabled
- System Profile set to Custom
- CPU Power Management set to Maximum Performance
- Memory Frequency set to Maximum Performance
- Turbo Boost enabled
- C States disabled
- Memory Patrol Scrub disabled
- PCI ASPM L1 Link Power Management disabled

Sysinfo program /root/cpu2017/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on linux-wds7 Wed Nov 8 18:38:38 2017

<table>
<thead>
<tr>
<th>SUT (System Under Test) info as seen by some common utilities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>For more information on this section, see</td>
</tr>
<tr>
<td><a href="https://www.spec.org/cpu2017/Docs/config.html#sysinfo">https://www.spec.org/cpu2017/Docs/config.html#sysinfo</a></td>
</tr>
</tbody>
</table>

From /proc/cpuinfo
- model name : Intel(R) Xeon(R) Platinum 8153 CPU @ 2.00GHz
- 2 "physical id"s (chips)
- 64 "processors"
SPEC CPU2017 Integer Rate Result

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Platform Notes (Continued)

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 : 16
siblings : 32
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 64
On-line CPU(s) list: 0-63
Thread(s) per core: 2
Core(s) per socket: 16
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Platinum 8153 CPU @ 2.00GHz
Stepping: 4
CPU MHz: 1995.348
BogoMIPS: 3990.69
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 22528K
NUMA node0 CPU(s):
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58
60,62
NUMA node1 CPU(s):
1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55,57,59
61,63
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 pge mca cmov apic cpuid
cmpxchg8b pgref perfmon pbe hypervisor nonstop_tsc aperfmperf eagerfpu 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 3dnowprefetch ida arat epb plnl3 tsxtréms invd
pcm rdtsc cqm mxp avx512f avx512dq rdseed adx smt smap clflushopt clwb avx512cd
avx512bw avx512v1 xsavesopt xsaveopt xsavev1 cqm_llc cqm_occureq_llc pku ospke

/proc/cpuinfo cache data
cache size : 22528 KB

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Platform Notes (Continued)

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 56 58 60 62
node 0 size: 95335 MB
node 0 free: 94790 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 57 59 61 63
node 1 size: 96736 MB
node 1 free: 96279 MB
node distances:
node 0 1
0: 10 21
1: 21 10

From /proc/meminfo
MemTotal: 196682072 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
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.
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"
uname -a:
Linux linux-wds7 4.4.70-2-default #1 SMP Wed Jun 7 15:12:06 UTC 2017 (4502c76) x86_64
x86_64 x86_64 GNU/Linux

run-level 3 Nov 7 22:02

SPEC is set to: /root/cpu2017

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 btrfs 855G 25G 830G 3% /

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Platform Notes (Continued)

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. 1.0.0 08/10/2017
Memory:
6x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666
6x 00AD063200AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666
4x Not Specified Not Specified

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
CC  500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base)  
557.xz_r(base)
------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==============================================================================
CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)  
541.leela_r(base)
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==============================================================================
FC  548.exchange2_r(base)
------------------------------------------------------------------------------
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

Base Compiler Invocation

C benchmarks:
iccc
C++ benchmarks:
icpc

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### Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort

### Base Portability Flags

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<tbody>
<tr>
<td>500.perlbench_r</td>
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### Base Optimization Flags

#### C benchmarks:
-W1, -z, muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div 
-qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

#### C++ benchmarks:
-W1, -z, muldefs -xCORE-AVX2 -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-AVX2 -ipo -O3 -no-prec-div 
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte 
-L/usr/local/je5.0.1-64/lib -ljemalloc

### Base Other Flags

#### C benchmarks:
-m64 -std=c11

#### C++ benchmarks:
-m64

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### Base Other Flags (Continued)

Fortran benchmarks:
- -m64

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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