**SPEC® CPU2017 Integer Speed Result**

Dell Inc.

PowerEdge M640 (Intel Xeon Gold 6126, 2.60 GHz)

<table>
<thead>
<tr>
<th>Threads</th>
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<tr>
<td>600.perlbench_s 48</td>
<td>SPECspeed2017_int_peak = Not Run</td>
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<tr>
<td>602.gcc_s 48</td>
<td></td>
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<tr>
<td>605.mcf_s 48</td>
<td></td>
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<tr>
<td>620.omnetpp_s 48</td>
<td></td>
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<tr>
<td>623.xalancbmk_s 48</td>
<td></td>
</tr>
<tr>
<td>625.x264_s 48</td>
<td></td>
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<td>631.deepsjeng_s 48</td>
<td></td>
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<tr>
<td>641.leela_s 48</td>
<td></td>
</tr>
<tr>
<td>648.exchange2_s 48</td>
<td></td>
</tr>
<tr>
<td>657.xz_s 48</td>
<td></td>
</tr>
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</table>

**Hardware**

- **CPU Name**: Intel Xeon Gold 6126
- **Max MHz.**: 3700
- **Nominal**: 2600
- **Enabled**: 24 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**: 19.25 MB I+D on chip per chip
- **Other**: None
- **Memory**: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)
- **Storage**: 960 GB SATA SSD
- **Other**: None

**Software**

- **OS**: SUSE Linux Enterprise Server 12 SP3 (x86_64)
- **Compiler**: C/C++: Version 18.0.0.128 of Intel C/C++
- **Parallel**: Yes
- **Firmware**: Version 1.0.0 released Aug-2017
- **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.

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SPECspeed2017_int_base = 8.60

SPECspeed2017_int_peak = Not Run

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tr>
<td>625.x264_s</td>
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<td>152</td>
<td>11.6</td>
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<tr>
<td>631.deepsjeng_s</td>
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<td>5.04</td>
<td>285</td>
<td>5.04</td>
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<tr>
<td>641.leela_s</td>
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<td>4.34</td>
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<tr>
<td>657.xz_s</td>
<td>48</td>
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<td>21.6</td>
<td>286</td>
<td>21.6</td>
<td>287</td>
<td>21.5</td>
</tr>
</tbody>
</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"
OMP_STACKSIZE = "192M"

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

ejemalloc: configured and built at default for
32bit (i686) and 64bit (x86_64) targets;
ejemalloc: built with the RedHat Enterprise 7.4,
and the system compiler gcc 4.8.5;
ejemalloc: 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)

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

#### PowerEdge M640 (Intel Xeon Gold 6126, 2.60 GHz)

<table>
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<tr>
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#### General Notes (Continued)

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](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 96c45e4568ad54c135fd618bccc091c0f
running on linux-8d7c Wed Nov 22 00:43:30 2017

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](https://www.spec.org/cpu2017/Docs/config.html#sysinfo)

From /proc/cpuinfo

    model name : Intel(R) Xeon(R) Gold 6126 CPU @ 2.60GHz
    2 "physical id"s (chips)
    48 "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 : 24

physical 0: cores 1 2 3 4 5 6 8 9 10 11 12 13
physical 1: cores 0 1 3 4 5 6 8 9 10 11 12 13

(Continued on next page)
Dell Inc.

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SPECspeed2017_int_base = 8.60
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CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: Nov-2017
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Platform Notes (Continued)

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 48
On-line CPU(s) list: 0-47
Thread(s) per core: 2
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 6126 CPU @ 2.60GHz
Stepping: 4
CPU MHz: 2593.931
BogoMIPS: 5187.86
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 19712K
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
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
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 xtopology nonstop_tsc
aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg
fma cx16 xtpr pdcm pcid cdg sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epb pnb pln pts dtherm intel_pt
tpr_shadow vmmi flexpriority ept vpid fsgsbase tsc_adjust bm11 hle avx2 smep bmi2
erms invpcid rtm cqm mpx avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd
avx512bw avx512vl xsaveopt xsavec xgetbv1 cqm_llc cqm_occup_llc pku ospke

/proc/cpuinfo cache data
 cache size : 19712 KB

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
 node 0 size: 95335 MB
 node 0 free: 94817 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
 node 1 size: 96736 MB

(Continued on next page)
Dell Inc. PowerEdge M640 (Intel Xeon Gold 6126, 2.60 GHz)  

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

Platform Notes (Continued)

node 1 free: 96236 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-8d7c 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 22 00:41

SPEC is set to: /root/cpu2017  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda3 btrfs 855G 25G 831G 3% /

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:  
12x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666  
4x Not Specified Not Specified

(End of data from sysinfo program)
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Compiler Version Notes

==============================================================================
<p>| CC  600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base) |
| 657.xz_s(base) |
| icc (ICC) 18.0.0 20170811 |</p>
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<td>CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)</td>
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<tr>
<td>icpc (ICC) 18.0.0 20170811</td>
</tr>
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<tr>
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<tr>
<td>FC  648.exchange2_s(base)</td>
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<td>ifort (IFORT) 18.0.0 20170811</td>
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Base Compiler Invocation

C benchmarks:  
icc

C++ benchmarks:  
icpc

Fortran benchmarks:  
ifort

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

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### Base Portability Flags (Continued)

641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

### Base Optimization Flags

**C benchmarks**:

- Wl,-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**:

- Wl,-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**:

- Wl,-z,muldefs -xCORE-AVX512 -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

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

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