**SPEC® CPU2017 Integer Speed Result**

Dell Inc.  
PowerEdge C6420 (Intel Xeon Platinum 8180, 2.50 GHz)

<table>
<thead>
<tr>
<th>Thread</th>
<th>SPECspeed2017_int_base</th>
<th>SPECspeed2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>9.22</td>
<td>Not Run</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>7.42</td>
<td></td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>9.56</td>
<td></td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>623.xalanchmk_s</td>
<td>12.2</td>
<td></td>
</tr>
<tr>
<td>625.x264_s</td>
<td>5.17</td>
<td></td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>4.44</td>
<td></td>
</tr>
<tr>
<td>641.leela_s</td>
<td>13.7</td>
<td></td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>23.9</td>
<td></td>
</tr>
<tr>
<td>657.xz_s</td>
<td></td>
<td></td>
</tr>
</tbody>
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**Test Sponsor:** Dell Inc.  
**Test Date:** Dec-2017  
**Hardware Availability:** Sep-2017  
**Software Availability:** Sep-2017

### Hardware

- **CPU Name:** Intel Xeon Platinum 8180  
- **Max MHz.:** 3800  
- **Nominal:** 2500  
- **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:** 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)  
- **Storage:** 480GB SATA SSD  
- **Other:** None

### Software

- **OS:** CentOS Linux release 7.4.1708 (Core)  
- **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:** Yes  
- **Firmware:** Version 1.0.8 released Jul-2017  
- **File System:** xfs  
- **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;
## SPEC CPU2017 Integer Speed Result

Dell Inc.  
PowerEdge C6420 (Intel Xeon Platinum 8180, 2.50 GHz)  

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

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<tr>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<th>Seconds</th>
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<tr>
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<td>112</td>
<td>283</td>
<td>6.27</td>
<td>280</td>
<td>6.35</td>
<td>280</td>
<td>6.34</td>
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<tr>
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<td><strong>409</strong></td>
<td><strong>9.73</strong></td>
<td>413</td>
<td>9.63</td>
<td>403</td>
<td>9.87</td>
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<tr>
<td>605.mcf_s</td>
<td>112</td>
<td>421</td>
<td>11.2</td>
<td>428</td>
<td>11.0</td>
<td><strong>425</strong></td>
<td><strong>11.1</strong></td>
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<td>620.omnetpp_s</td>
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<td><strong>148</strong></td>
<td><strong>9.56</strong></td>
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<td>9.55</td>
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<td>9.65</td>
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<td>145</td>
<td>12.2</td>
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<td>277</td>
<td>5.17</td>
<td><strong>277</strong></td>
<td><strong>5.17</strong></td>
<td>277</td>
<td>5.18</td>
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<td>641.leela_s</td>
<td>112</td>
<td>384</td>
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<td><strong>4.44</strong></td>
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<td>4.44</td>
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<td>112</td>
<td>214</td>
<td>13.7</td>
<td><strong>215</strong></td>
<td><strong>13.7</strong></td>
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<td>13.6</td>
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<td>657.xz_s</td>
<td>112</td>
<td>260</td>
<td>23.8</td>
<td>257</td>
<td>24.0</td>
<td><strong>259</strong></td>
<td><strong>23.9</strong></td>
</tr>
</tbody>
</table>

**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
```

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;

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

**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

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 localhost.localdomain Wed Dec 6 20:51:42 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

From /proc/cpuinfo  
model name : Intel(R) Xeon(R) Platinum 8180 CPU @ 2.50GHz  
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 CPU2017 Integer Speed Result

Dell Inc.
PowerEdge C6420 (Intel Xeon Platinum 8180, 2.50 GHz)

SPECspeed2017_int_base = 9.22
SPECspeed2017_int_peak = Not Run

CPU2017 License: 55
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Test Date: Dec-2017
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Platform Notes (Continued)

28 29 30

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
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): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Platinum 8180 CPU @ 2.50GHz
Stepping: 4
CPU MHz: 2500.000
BogoMIPS: 5000.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 39424K
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
,60,62,64,66,68,70,72,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110
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
,61,63,65,67,69,71,73,75,77,79,81,83,85,87,89,91,93,95,97,99,101,103,105,107,109,111
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 rdtsdp
lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc
aperfmperf eagerfp Proc mmxex sr virmon pm x2apic movbre popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3nowprefetch ehp cat _13 cdp _13 intel _p
itrp_shadow vmmi flexpriority ept vpid fsgsbase tsc_adjust bm11 hle avx2 smep bmi2
erms invpcid rtm cqm rdt a avx512f avx512dq rdseed adx smap cflushopt clwb
avx512cd avx512bw avx512vl xsaveopt xsavec xgetbv1 cqm_llc cqm_occup llc
clm_mmb_total cqm_mmb_local tdtm ida arat pln pts

/proc/cpuinfo cache data
cache size : 39424 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 2 nodes (0-1)
## Dell Inc.
### PowerEdge C6420 (Intel Xeon Platinum 8180, 2.50 GHz)

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</table>

### Platform Notes (Continued)

- **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 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110
- **node 0 size:** 96965 MB
- **node 0 free:** 94132 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 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 101 103 105 107 109 111
- **node 1 size:** 98304 MB
- **node 1 free:** 95375 MB
- **node distances:**
  - node 0: 10 21
  - node 1: 21 10

From `/proc/meminfo`
- MemTotal: 196690028 kB
- HugePages_Total: 128
- Hugepagesize: 2048 kB

From `/etc/*release*` /`/etc/*version*`
- centos-release: CentOS Linux release 7.4.1708 (Core)
- centos-release-upstream: Derived from Red Hat Enterprise Linux 7.4 (Source)
- os-release:
  - NAME="CentOS Linux"
  - VERSION="7 (Core)"
  - ID="centos"
  - ID_LIKE="rhel fedora"
  - VERSION_ID="7"
  - PRETTY_NAME="CentOS Linux 7 (Core)"
  - ANSI_COLOR="0;31"
  - CPE_NAME="cpe:/o:centos:centos:7"
- redhat-release: CentOS Linux release 7.4.1708 (Core)
- system-release: CentOS Linux release 7.4.1708 (Core)
- system-release-cpe: cpe:/o:centos:centos:7

`uname -a`:
Linux localhost.localdomain 3.10.0-693.5.2.el7.x86_64 #1 SMP Fri Oct 20 20:32:50 UTC 2017 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 6 20:51

SPEC is set to: /root/cpu2017

Additional information from dmidecode follows. WARNING: Use caution when you interpret

(Continued on next page)
SpEC CPU2017 Integer Speed Result

Dell Inc.
PowerEdge C6420 (Intel Xeon Platinum 8180, 2.50 GHz)

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CPU2017 License: 55
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Tested by: Dell Inc.

Test Date: Dec-2017
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Software Availability: Sep-2017

Platform Notes (Continued)
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. 1.0.8 07/12/2017
Memory:
3x 002C00B3002C 18ASF2G72PDZ-2G6D1 16 GB 2 rank 2666
9x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666
4x Not Specified Not Specified

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
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
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
==============================================================================
CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
  641.leela_s(base)
==============================================================================
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
==============================================================================
FC  648.exchange2_s(base)
==============================================================================
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
==============================================================================

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

(Continued on next page)
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Base Compiler Invocation (Continued)

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
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 -gopenmp -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 -align array32byte
-L/usr/local/je5.0.1-64/lib -ljemalloc

Base Other Flags

C benchmarks:
-m64 -std=c11

C++ benchmarks:
-m64

(Continued on next page)
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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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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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Originally published on 2018-02-27.