### Dell Inc.

**PowerEdge C6420** (Intel Xeon Gold 6142, 2.60 GHz)

<table>
<thead>
<tr>
<th>SPECspeed2017_fp_base</th>
<th>106</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License**: 55

**Test Sponsor**: Dell Inc.

**Tested by**: Dell Inc.

**Test Date**: Nov-2017

**Hardware Availability**: Sep-2017

**Software Availability**: Sep-2017

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed2017_fp_base (106)</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>64</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>64</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>64</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>64</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>64</td>
</tr>
<tr>
<td>628.pop2_s</td>
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<tr>
<td>638.imagick_s</td>
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</tr>
<tr>
<td>644.nab_s</td>
<td>64</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>64</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>64</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th><strong>CPU Name</strong></th>
<th>Intel Xeon Gold 6142</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max MHz.</strong></td>
<td>3700</td>
</tr>
<tr>
<td><strong>Nominal</strong></td>
<td>2600</td>
</tr>
<tr>
<td><strong>Enabled</strong></td>
<td>32 cores, 2 chips, 2 threads/core</td>
</tr>
<tr>
<td><strong>Orderable</strong></td>
<td>1,2 chips</td>
</tr>
<tr>
<td><strong>Cache L1</strong></td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Cache L2</strong></td>
<td>1 MB I+D on chip per core</td>
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<tr>
<td><strong>Cache L3</strong></td>
<td>22 MB I+D on chip per chip</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Memory</strong></td>
<td>192 GB (12 x 16 GB 2Rx8 PC4-2666V-R)</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>480 GB SATA SSD</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>None</td>
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</table>

### Software

<table>
<thead>
<tr>
<th><strong>OS</strong></th>
<th>CentOS Linux release 7.4.1708 (Core) 3.10.0-693.5.2.el7.x86_64</th>
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</thead>
<tbody>
<tr>
<td><strong>Compiler</strong></td>
<td>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</td>
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<tr>
<td><strong>Parallel</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Firmware</strong></td>
<td>Version 1.0.8 released Jul-2017</td>
</tr>
<tr>
<td><strong>File System</strong></td>
<td>xfs</td>
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<tr>
<td><strong>System State</strong></td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td><strong>Base Pointers</strong></td>
<td>64-bit</td>
</tr>
<tr>
<td><strong>Peak Pointers</strong></td>
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<tr>
<td><strong>Other</strong></td>
<td>None</td>
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</tbody>
</table>
Dell Inc. PowerEdge C6420 (Intel Xeon Gold 6142, 2.60 GHz)

SPECspeed2017_fp_base = 106
SPECspeed2017_fp_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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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>64</td>
<td>134</td>
<td>439</td>
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<tr>
<td>607.cactuBSSN_s</td>
<td>64</td>
<td>124</td>
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<td>619.lbm_s</td>
<td>64</td>
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<tr>
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<td></td>
</tr>
</tbody>
</table>

SPECspeed2017_fp_base = 106
SPECspeed2017_fp_peak = Not Run

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,compact"
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
File system page cache synced and cleared with:
sync; echo 3 > /proc/sys/vm/drop_caches

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

(Continued on next page)
Dell Inc.

PowerEdge C6420 (Intel Xeon Gold 6142, 2.60 GHz)

SPECspeed2017_fp_base = 106
SPECspeed2017_fp_peak = Not Run

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

General Notes (Continued)

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 96c45e4568ad5c135fd618bcc091c0f
running on localhost.localdomain Wed Nov 22 20:23:29 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) Gold 6142 CPU @ 2.60GHz
  2  "physical id"s (chips)
  64 "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 : 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

(Continued on next page)
SPEC CPU2017 Floating Point Speed Result

Dell Inc. PowerEdge C6420 (Intel Xeon Gold 6142, 2.60 GHz)

SPECspeed2017_fp_base = 106
SPECspeed2017_fp_peak = Not Run

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

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) Gold 6142 CPU @ 2.60GHz
Stepping: 4
CPU MHz: 2600.000
BogoMIPS: 5200.00
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 arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 fma cx16 xtpmr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt lm22tsc tm2 sse4_1 mtrrорм xsave movbe xsaveopt xsaves xsaveopt xsave xgetbv1 cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local dtherm ida arat pln pts

/platform/cpuid(cache)
cache size: 22528 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 48 50 52 54 56 58 60 62
node 0 size: 96965 MB
node 0 free: 93079 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: 98304 MB
node 1 free: 92783 MB
node distances:

(Continued on next page)
SPEC CPU2017 Floating Point Speed Result

Dell Inc.

PowerEdge C6420 (Intel Xeon Gold 6142, 2.60 GHz)

SPECspeed2017_fp_base = 106
SPECspeed2017_fp_peak = Not Run

<table>
<thead>
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<th>CPU2017 License: 55</th>
<th>Test Date: Nov-2017</th>
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<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Sep-2017</td>
</tr>
<tr>
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<td>Software Availability: Sep-2017</td>
</tr>
</tbody>
</table>

**Platform Notes (Continued)**

```
node 0 1
  0: 10 21
  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 Nov 22 17:46

SPEC is set to: /root/cpu2017
- Filesystem Type Size Used Avail Use% Mounted on
- /dev/sda2 xfs 433G 21G 413G 5% /

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. 1.0.8 07/12/2017
- Memory:
  - 12x 002C00B3002C 18ASF2G72PDZ-2G6D1 16 GB 2 rank 2666
  - 4x Not Specified Not Specified

(End of data from sysinfo program)
Dell Inc.

PowerEdge C6420 (Intel Xeon Gold 6142, 2.60 GHz)

SPEC CPU2017 Floating Point Speed Result

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</table>

CPU2017 License: 55
Test Date: Nov-2017

Test Sponsor: Dell Inc.
Hardware Availability: Sep-2017

Tested by: Dell Inc.
Software Availability: Sep-2017

Compiler Version Notes

==============================================================================
CC  619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)  
------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
------------------------------------------------------------------------------

FC  607.cactuBSSN_s(base)  
------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
icc (ICC) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
ifort (IFORT) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
------------------------------------------------------------------------------

FC  603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)  
------------------------------------------------------------------------------
ifort (IFORT) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
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CC  621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(base)  
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Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
icc (ICC) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
------------------------------------------------------------------------------

Base Compiler Invocation

C benchmarks:
icc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icc
### Dell Inc. PowerEdge C6420 (Intel Xeon Gold 6142, 2.60 GHz)

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**Software Availability:** Sep-2017

#### Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:
- icpc
- icc
- ifort

#### Base Portability Flags

- 603.bwaves_s: -DSPEC_LP64
- 607.cactuBSSN_s: -DSPEC_LP64
- 619.lbm_s: -DSPEC_LP64
- 621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
- 627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
- 628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
- -assume byterecl
- 638.imagick_s: -DSPEC_LP64
- 644.nab_s: -DSPEC_LP64
- 649.fotonik3d_s: -DSPEC_LP64
- 654.roms_s: -DSPEC_LP64

#### Base Optimization Flags

**C benchmarks:**
- -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
- -ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP

**Fortran benchmarks:**
- -DSPEC_OPENMP -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
- -ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
- -nostandard-realloc-lhs -align array32byte

**Benchmarks using both Fortran and C:**
- -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
- -ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
- -nostandard-realloc-lhs -align array32byte

**Benchmarks using Fortran, C, and C++:**
- -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-prefetch
- -ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
- -nostandard-realloc-lhs -align array32byte
### Dell Inc.

**PowerEdge C6420 (Intel Xeon Gold 6142, 2.60 GHz)**

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#### Base Other Flags

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

Fortran benchmarks:
- `-m64`

Benchmarks using both Fortran and C:
- `-m64 -std=c11`

Benchmarks using Fortran, C, and C++:
- `-m64 -std=c11`

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 v1.0.2 on 2017-11-22 21:23:29-0500.  
Originally published on 2018-02-27.