Dell Inc.
PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base = 82.9</th>
<th>SPECrate2017_fp_peak = Not Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inc.</td>
<td></td>
</tr>
<tr>
<td>Test Sponsor:</td>
<td>Dell Inc.</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Dell Inc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon Silver 4110</td>
<td>OS: SUSE Linux Enterprise Server 12 SP2</td>
</tr>
<tr>
<td>Max MHz.: 3000</td>
<td>4.4.21-69-default</td>
</tr>
<tr>
<td>Nominal: 2100</td>
<td>Compiler: C/C++: Version 18.0.0.128 of Intel C/C++</td>
</tr>
<tr>
<td>Enabled: 16 cores, 2 chips, 2 threads/core</td>
<td>Compiler for Linux;</td>
</tr>
<tr>
<td>Orderable: 1.2 chip</td>
<td>Fortran: Version 18.0.0.128 of Intel Fortran</td>
</tr>
<tr>
<td>Cache L1: 32 KB I + 32 KB D on chip per core</td>
<td>Compiler for Linux</td>
</tr>
<tr>
<td>L2: 1 MB I+D on chip per core</td>
<td>Parallel: No</td>
</tr>
<tr>
<td>L3: 11 MB I+D on chip per chip</td>
<td>Firmware: Version 1.3.1 released Sep-2017</td>
</tr>
<tr>
<td>Other: None</td>
<td>File System: xfs</td>
</tr>
<tr>
<td>Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R, running at 2400)</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Storage: 480 GB SATA SSD</td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td>Other: None</td>
<td>Peak Pointers: Not Applicable</td>
</tr>
<tr>
<td></td>
<td>Other: None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>32</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>32</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>32</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>32</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>32</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>32</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>32</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>32</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>32</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>32</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>32</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>32</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base (82.9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
</tr>
<tr>
<td>508.namd_r</td>
</tr>
<tr>
<td>510.parest_r</td>
</tr>
<tr>
<td>511.povray_r</td>
</tr>
<tr>
<td>519.lbm_r</td>
</tr>
<tr>
<td>521.wrf_r</td>
</tr>
<tr>
<td>526.blender_r</td>
</tr>
<tr>
<td>527.cam4_r</td>
</tr>
<tr>
<td>538.imagick_r</td>
</tr>
<tr>
<td>544.nab_r</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
</tr>
<tr>
<td>554.roms_r</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon Silver 4110</td>
<td>OS: SUSE Linux Enterprise Server 12 SP2</td>
</tr>
<tr>
<td>Max MHz.: 3000</td>
<td>4.4.21-69-default</td>
</tr>
<tr>
<td>Nominal: 2100</td>
<td>Compiler: C/C++: Version 18.0.0.128 of Intel C/C++</td>
</tr>
<tr>
<td>Enabled: 16 cores, 2 chips, 2 threads/core</td>
<td>Compiler for Linux;</td>
</tr>
<tr>
<td>Orderable: 1.2 chip</td>
<td>Fortran: Version 18.0.0.128 of Intel Fortran</td>
</tr>
<tr>
<td>Cache L1: 32 KB I + 32 KB D on chip per core</td>
<td>Compiler for Linux</td>
</tr>
<tr>
<td>L2: 1 MB I+D on chip per core</td>
<td>Parallel: No</td>
</tr>
<tr>
<td>L3: 11 MB I+D on chip per chip</td>
<td>Firmware: Version 1.3.1 released Sep-2017</td>
</tr>
<tr>
<td>Other: None</td>
<td>File System: xfs</td>
</tr>
<tr>
<td>Memory: 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R, running at 2400)</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Storage: 480 GB SATA SSD</td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td>Other: None</td>
<td>Peak Pointers: Not Applicable</td>
</tr>
<tr>
<td></td>
<td>Other: None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>32</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>32</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>32</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>32</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>32</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>32</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>32</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>32</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>32</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>32</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>32</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>32</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base (82.9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
</tr>
<tr>
<td>508.namd_r</td>
</tr>
<tr>
<td>510.parest_r</td>
</tr>
<tr>
<td>511.povray_r</td>
</tr>
<tr>
<td>519.lbm_r</td>
</tr>
<tr>
<td>521.wrf_r</td>
</tr>
<tr>
<td>526.blender_r</td>
</tr>
<tr>
<td>527.cam4_r</td>
</tr>
<tr>
<td>538.imagick_r</td>
</tr>
<tr>
<td>544.nab_r</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
</tr>
<tr>
<td>554.roms_r</td>
</tr>
</tbody>
</table>
SPEC CPU2017 Floating Point Rate Result

Dell Inc.
PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

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

SPECrate2017_fp_base = 82.9
SPECrate2017_fp_peak = Not Run

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>32</td>
<td>1053</td>
<td>305</td>
<td>1051</td>
<td>305</td>
<td>1053</td>
<td>305</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>32</td>
<td>594</td>
<td>68.2</td>
<td>597</td>
<td>67.9</td>
<td>595</td>
<td>68.1</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>32</td>
<td>550</td>
<td>55.3</td>
<td>547</td>
<td>55.6</td>
<td>547</td>
<td>55.6</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>32</td>
<td>1458</td>
<td>57.4</td>
<td>1463</td>
<td>57.2</td>
<td>1457</td>
<td>57.5</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>32</td>
<td>829</td>
<td>90.2</td>
<td>829</td>
<td>90.1</td>
<td>826</td>
<td>90.5</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>32</td>
<td>524</td>
<td>64.4</td>
<td>524</td>
<td>64.3</td>
<td>525</td>
<td>64.2</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>32</td>
<td>769</td>
<td>93.3</td>
<td>769</td>
<td>93.2</td>
<td>767</td>
<td>93.4</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>32</td>
<td>641</td>
<td>76.0</td>
<td>640</td>
<td>76.1</td>
<td>639</td>
<td>76.2</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>32</td>
<td>807</td>
<td>69.3</td>
<td>810</td>
<td>69.1</td>
<td>810</td>
<td>69.1</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>32</td>
<td>723</td>
<td>110</td>
<td>723</td>
<td>110</td>
<td>723</td>
<td>110</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>32</td>
<td>559</td>
<td>96.4</td>
<td>559</td>
<td>96.3</td>
<td>561</td>
<td>96.0</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>32</td>
<td>1420</td>
<td>87.8</td>
<td>1421</td>
<td>87.7</td>
<td>1414</td>
<td>88.2</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>32</td>
<td>1027</td>
<td>49.5</td>
<td>1030</td>
<td>49.3</td>
<td>1028</td>
<td>49.5</td>
</tr>
</tbody>
</table>

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 numaclt i.e.:
numactl --interleave=all runcpu <etc>
Dell Inc.
PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

CPU2017 License: 55
Test Sponsor: Dell Inc.
Test Date: Nov-2017
Tested by: Dell Inc.
Hardware Availability: Sep-2017
Software Availability: Sep-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) Silver 4110 CPU @ 2.10GHz
  2  "physical id"s (chips)
  32 "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 : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 32
On-line CPU(s) list: 0-31
Thread(s) per core: 2
Core(s) per socket: 8
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Silver 4110 CPU @ 2.10GHz
Stepping: 4
SPEC CPU2017 Floating Point Rate Result
Copyright 2017-2018 Standard Performance Evaluation Corporation

Dell Inc.
PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>82.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_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

Platform Notes (Continued)

CPU MHz: 2095.177
BogoMIPS: 4190.35
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 11264K
NUMA node0 CPU(s): 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30
NUMA node1 CPU(s): 1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31
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
aperfmpref eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg
fma cx16 xtrr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx fl64 rdrand lahf_lm abm 3nowprefetch ida arat epb pln pts dtherm intel_pt
tpr_shadow vmmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2
erms invpcid rtm cqm mpx avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd
avx512bw avx512vl xsaveopt xsaveopt xgetbv1 cqm_llc cqm_occupy_llc

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
   node 0 size: 95269 MB
   node 0 free: 94811 MB
   node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
   node 1 size: 96615 MB
   node 1 free: 96153 MB
   node distances:
      node  0  1
      0:  10  21
      1:  21  10

From /proc/meminfo
MemTotal: 196489992 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/usr/bin/lsb_release -d
SUSE Linux Enterprise Server 12 SP2

From /etc/*release* /etc/*version*
SuSE-release:
   SUSE Linux Enterprise Server 12 (x86_64)

(Continued on next page)
### Platform Notes (Continued)

```
VERSION = 12
PATCHLEVEL = 2
# 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-SP2"
  VERSION_ID="12.2"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
  Linux linux-j1sy 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016 (9464f67)
  x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Nov 2 14:29

SPEC is set to: /root/cpu2017
```

---

### compiler version notes

```
==============================================================================
CC  519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
==============================================================================
```

```
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

```
==============================================================================
CXXC 508.namd_r(base) 510.parest_r(base)
==============================================================================
```

(Continued on next page)
Dell Inc.

PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>82.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_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

Compiler Version Notes (Continued)

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

--

CC 511.povray_r(base) 526.blender_r(base)
---

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
iccc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

---

FC 507.cactuBSSN_r(base)
---

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
iccc (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 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
---

ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

---

CC 521.wrf_r(base) 527.cam4_r(base)
---

ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
iccc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

---

Base Compiler Invocation

C benchmarks:
icc

(Continued on next page)
Dell Inc. PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base =</th>
<th>82.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_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

### Base Compiler Invocation (Continued)

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

### Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

### Base Optimization Flags

- **C benchmarks:**  
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3

- **C++ benchmarks:**  
  -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3

(Continued on next page)
**SPEC CPU2017 Floating Point Rate Result**

---

**Dell Inc.**

PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>82.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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

---

### Base Optimization Flags (Continued)

Fortran benchmarks:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
```

Benchmarks using both C and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3
```

Benchmarks using Fortran, C, and C++:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
```

---

### Base Other Flags

**C benchmarks:**

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

**C++ benchmarks:**

```
-m64
```

Fortran benchmarks:

```
-m64
```

Benchmarks using both Fortran and C:

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

Benchmarks using both C 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:

### SPEC CPU2017 Floating Point Rate Result

**Dell Inc.**

PowerEdge R440 (Intel Xeon Silver 4110, 2.10 GHz)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>82.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_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

SPEC is a registered trademark of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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 2017-11-02 08:16:07-0400.
Originally published on 2017-12-26.