Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

SPECrate®2017_int_base = 58.0
SPECrate®2017_int_peak = 61.0

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu
Test Date: Jan-2020
Hardware Availability: Oct-2019
Software Availability: May-2019

500.perlbench_r 16
502.gcc_r 16
505.mcf_r 16
520.omnetpp_r 16
523.xalancbkmk_r 16
525.x264_r 16
531.deepsjeng_r 16
541.leela_r 16
548.exchange2_r 16
557.xz_r 16

SPECrate®2017_int_base (58.0)
SPECrate®2017_int_peak (61.0)

Hardware
CPU Name: Intel Xeon E-2278G
Max MHz: 5000
Nominal: 3400
Enabled: 8 cores, 1 chip, 2 threads/core
Orderable: 1 chip
Cache L1: 32 KB I + 32 KB D on chip per core
L2: 256 KB I+D on chip per core
L3: 16 MB I+D on chip per chip
Other: None
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)
Storage: 1 x SATA M.2 SSD, 480 GB
Other: None

Software
Compiler: C/C++: Version 19.0.4.227 of Intel C/C++ Compiler for Linux;
Fortran: Version 19.0.4.227 of Intel Fortran Compiler for Linux
Parallel: No
Firmware: Fujitsu BIOS Version V5.0.0.13 R1.12.0 for D3673-A1x. Released Sep-2019
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS set to prefer performance at the cost of additional power usage
## 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>
<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>500.perlbench_r</td>
<td>16</td>
<td>520</td>
<td>49.0</td>
<td>521</td>
<td><strong>48.9</strong></td>
<td>525</td>
<td>48.5</td>
<td>16</td>
<td><strong>564</strong></td>
<td>56.1</td>
<td>455</td>
<td>55.9</td>
<td>453</td>
<td>56.2</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>16</td>
<td>510</td>
<td>44.4</td>
<td>510</td>
<td><strong>44.4</strong></td>
<td>512</td>
<td>44.3</td>
<td>16</td>
<td>421</td>
<td>53.8</td>
<td><strong>421</strong></td>
<td><strong>53.8</strong></td>
<td>423</td>
<td>53.5</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>16</td>
<td>392</td>
<td>66.0</td>
<td>391</td>
<td><strong>66.1</strong></td>
<td>391</td>
<td>66.1</td>
<td>16</td>
<td>392</td>
<td>66.0</td>
<td><strong>391</strong></td>
<td><strong>66.1</strong></td>
<td>391</td>
<td>66.1</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>16</td>
<td>697</td>
<td>30.1</td>
<td>697</td>
<td>30.1</td>
<td>698</td>
<td>30.1</td>
<td>16</td>
<td>697</td>
<td>30.1</td>
<td>697</td>
<td>30.1</td>
<td>698</td>
<td>30.1</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>16</td>
<td>296</td>
<td>57.0</td>
<td>298</td>
<td><strong>56.7</strong></td>
<td>301</td>
<td>56.1</td>
<td>16</td>
<td>269</td>
<td><strong>62.9</strong></td>
<td>270</td>
<td>62.5</td>
<td>268</td>
<td>63.0</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>16</td>
<td>208</td>
<td>135</td>
<td>207</td>
<td><strong>135</strong></td>
<td>207</td>
<td>135</td>
<td>16</td>
<td>200</td>
<td><strong>140</strong></td>
<td>200</td>
<td>140</td>
<td>200</td>
<td>140</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>16</td>
<td>347</td>
<td>52.8</td>
<td>347</td>
<td><strong>52.8</strong></td>
<td>347</td>
<td>52.8</td>
<td>16</td>
<td>347</td>
<td>52.8</td>
<td>347</td>
<td><strong>52.8</strong></td>
<td>347</td>
<td>52.8</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>16</td>
<td>551</td>
<td>48.1</td>
<td>551</td>
<td><strong>48.1</strong></td>
<td>551</td>
<td>48.1</td>
<td>16</td>
<td>551</td>
<td>48.1</td>
<td><strong>571</strong></td>
<td><strong>48.1</strong></td>
<td>551</td>
<td>48.1</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>16</td>
<td>313</td>
<td>134</td>
<td>310</td>
<td>135</td>
<td>313</td>
<td>134</td>
<td>16</td>
<td>302</td>
<td><strong>139</strong></td>
<td>302</td>
<td>139</td>
<td>302</td>
<td>139</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>16</td>
<td>454</td>
<td><strong>38.1</strong></td>
<td>454</td>
<td><strong>38.0</strong></td>
<td>455</td>
<td><strong>38.1</strong></td>
<td>16</td>
<td>454</td>
<td><strong>38.1</strong></td>
<td>454</td>
<td>38.0</td>
<td>453</td>
<td><strong>38.1</strong></td>
</tr>
</tbody>
</table>

### Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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"
Kernel Boot Parameter set with: nohz_full=1-15

### Environment Variables Notes

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

```
LD_LIBRARY_PATH = 
"/home/Benchmark/speccpu2017-1.1.0/lib/intel64:/home/Benchmark/speccpu2017-1.1.0/lib/intel64:/home/Benchmark/speccpu2017-1.1.0/lib/intel64:/home/Benchmark/speccpu2017-1.1.0/lib/ia32:/home/Benchmark/speccpu2017-1.1.0/lib/ia32:/home/Benchmark/speccpu2017-1.1.0/lib/ia32:/home/Benchmark/speccpu2017-1.1.0/lib/ia32:/home/Benchmark/speccpu2017-1.1.0/lib/ia32:
```

### General Notes

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

```
LD_LIBRARY_PATH = 
"/home/Benchmark/speccpu2017-1.1.0/lib/intel64"
```

Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32 GB RAM memory using Redhat Enterprise Linux 7.5
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:

(Continued on next page)
Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

General Notes (Continued)

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
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: 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.
Yes: 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.

Platform Notes

BIOS configuration:
Adjacent Cache Line Prefetch = Disabled
C-States = Disabled
Fan Control = Full
Hardware Prefetcher = Disabled
Intel Virtualization Technology = Disabled
Intel(R) Speed Shift Technology = Disabled

Sysinfo program /home/Benchmark/speccpu2017-1.1.0/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011
running on SLES15-BMT Sun Jan 12 21:31:33 2020

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) E-2278G CPU @ 3.40GHz
  1 "physical id"s (chips)
  16 "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

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 16
On-line CPU(s) list: 0-15
Thread(s) per core: 2

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

- **Core(s) per socket:** 8
- **Socket(s):** 1
- **NUMA node(s):** 1
- **Vendor ID:** GenuineIntel
- **CPU family:** 6
- **Model:** 158
- **Model name:** Intel(R) Xeon(R) E-2278G CPU @ 3.40GHz
- **Stepping:** 13
- **CPU MHz:** 3400.000
- **CPU max MHz:** 5000.0000
- **CPU min MHz:** 800.0000
- **BogoMIPS:** 6816.00
- **Virtualization:** VT-x
- **L1d cache:** 32K
- **L1i cache:** 32K
- **L2 cache:** 256K
- **L3 cache:** 16384K
- **NUMA node0 CPU(s):** 0-15
- **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 cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb invpcid_single ssbd ibrs ibpb stibp ibrs_enabled tpr_shadow vmmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 ets invpcid rtm mpx rdseed adx smap clflushopt intel_pt xsaveopt xsavec xgetbv1 xsave dtherm ida arat pln pts hwp hwp_notify hwp_act_window hwp_epp flush_l1d arch_capabilities

```
From /proc/cpuinfo cache data
 cache size : 16384 KB
```

```
From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a physical chip.
 available: 1 nodes (0)
 node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
 node 0 size: 63766 MB
 node 0 free: 63252 MB
 node distances:
 node 0
 0: 10
```

```
From /proc/meminfo
 MemTotal: 65297232 kB
 HugePages_Total: 0
 Hugepagesize: 2048 kB
```

(Continued on next page)
Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

SPEC®2017 Integer Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

SPECrate®2017_int_base = 58.0
SPECrate®2017_int_peak = 61.0

Platform Notes (Continued)

From /etc/*release* /etc/*version*
  os-release:
    NAME="SLES"
    VERSION="15"
    VERSION_ID="15"
    PRETTY_NAME="SUSE Linux Enterprise Server 15"
    ID="sles"
    ID_LIKE="suse"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:15"

uname -a:
  Linux SLES15-BMT 4.12.14-25.28-default #1 SMP Wed Jan 16 20:00:47 UTC 2019 (dd6077c)
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault): Not affected
Microarchitectural Data Sampling: No status reported
CVE-2017-5754 (Meltdown): Not affected
CVE-2018-3639 (Speculative Store Bypass): Vulnerable
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

run-level 3 Jan 12 21:29

SPEC is set to: /home/Benchmark/speccpu2017-1.1.0
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda5      xfs   343G   66G  277G  20% /home

From /sys/devices/virtual/dmi/id
  BIOS: FUJITSU // American Megatrends Inc. V5.0.0.13 R1.12.0 for D3673-A1x
  09/06/2019
  Vendor: FUJITSU
  Product: PRIMERGY TX1330 M4
  Product Family: SERVER
  Serial: YMJLXXXXXX

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.
  Memory:
    4x SK Hynix HMA82GU7CJR8N-VK 16 GB 2 rank 2667

(End of data from sysinfo program)
Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

Fujitsu
 SPECrate®2017_int_base = 58.0
 SPECrate®2017_int_peak = 61.0

---

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

---

Compiler Version Notes

```
C       | 502.gcc_r(peak)

Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)
         | 525.x264_r(base, peak) 557.xz_r(base, peak)

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

C       | 502.gcc_r(peak)

Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak)
         | 525.x264_r(base, peak) 557.xz_r(base, peak)

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

C++     | 523.xalancbmk_r(peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base)
         | 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
(Continued on next page)
```
Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Jan-2020
Hardware Availability: Oct-2019
Software Availability: May-2019

SPECrate®2017_int_base = 58.0
SPECrate®2017_int_peak = 61.0

Compiler Version Notes (Continued)

Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

==============================================================================
C++ | 523.xalancbmk_r(peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

==============================================================================
C++ | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base)
| 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

==============================================================================
Fortran | 548.exchange2_r(base, peak)

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64

(Continued on next page)
Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

SPECrate®2017_int_base = 58.0
SPECrate®2017_int_peak = 61.0

Base Portability Flags (Continued)

502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc

C++ benchmarks:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc

Fortran benchmarks:
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64 -std=c11


C++ benchmarks (except as noted below):
icpc -m64

523.xalancbmk_r: icpc -m32 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/ia32_lin

(Continued on next page)
### Peak Compiler Invocation (Continued)

**Fortran benchmarks:**

`ifort -m64`

### Peak Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td><code>-DSPEC_LP64 -DSPEC_LINUX_X64</code></td>
</tr>
<tr>
<td>502.gcc_r</td>
<td><code>-D_FILE_OFFSET_BITS=64</code></td>
</tr>
<tr>
<td>505.mcf_r</td>
<td><code>-DSPEC_LP64</code></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td><code>-DSPEC_LP64</code></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td><code>-D_FILE_OFFSET_BITS=64 -DSPEC_LINUX</code></td>
</tr>
<tr>
<td>525.x264_r</td>
<td><code>-DSPEC_LP64</code></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td><code>-DSPEC_LP64</code></td>
</tr>
<tr>
<td>541.leela_r</td>
<td><code>-DSPEC_LP64</code></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td><code>-DSPEC_LP64</code></td>
</tr>
<tr>
<td>557.xz_r</td>
<td><code>-DSPEC_LP64</code></td>
</tr>
</tbody>
</table>

### Peak Optimization Flags

**C benchmarks:**

500.perlbench_r:

```
-W1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4
-fno-strict-overflow
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc
```

502.gcc_r:

```
-W1,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4
-L/usr/local/je5.0.1-32/lib -ljemalloc
```

505.mcf_r:

```
basepeak = yes
```

525.x264_r:

```
-W1,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -fno-alias
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc
```

557.xz_r:

```
basepeak = yes
```

**C++ benchmarks:**

(Continued on next page)
# SPEC CPU®2017 Integer Rate Result

**Fujitsu**  
PRIMERGY TX1330 M4, Intel Xeon E-2278G, 3.40 GHz

| SPECrate®2017_int_base = 58.0 | SPECrate®2017_int_peak = 61.0 |

| CPU2017 License: | 19 |
| Test Sponsor: | Fujitsu |
| Tested by: | Fujitsu |
| Test Date: | Jan-2020 |
| Hardware Availability: | Oct-2019 |
| Software Availability: | May-2019 |

## Peak Optimization Flags (Continued)

- 520.omnetpp_r: basepeak = yes
- 523.xalancbmk_r: `-Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4 -L/usr/local/je5.0.1-32/lib -ljemalloc`
- 531.deepsjeng_r: basepeak = yes
- 541.leela_r: basepeak = yes

### Fortran benchmarks:

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:
- [http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevD.xml](http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevD.xml)

---

SPEC CPU and SPECrate are registered trademarks 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 CPU®2017 v1.1.0 on 2020-01-12 07:31:33-0500.
Originally published on 2020-02-04.