# SPEC CPU®2017 Floating Point Rate Result

## Fujitsu

PRIMERGY TX1310 M3, Intel Celeron G3930E, 2.90 GHz

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>10.5</th>
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</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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### CPU2017 License: 19

**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test Date:** May-2020  
**Hardware Availability:** May-2017  
**Software Availability:** Apr-2020

### Hardware

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
</table>
| OS: SUSE Linux Enterprise Server 15 SP1 4.12.14-195-default | CPU Name: Intel Celeron G3930E  
Max MHz: 2900  
Nominal: 2900  
Enabled: 2 cores, 1 chip  
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: 2 MB I+D on chip per chip  
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2400V-E, running at 2133)  
Storage: 1 x 500 GB SATA HDD, 7200 RPM  
Other: None  
Power Management: BIOS set to prefer performance at the cost of additional power usage | Compiler: C/C++: Version 19.0.0.117 of Intel C/C++ Compiler for Linux; Fortran: Version 19.0.0.117 of Intel Fortran Compiler for Linux  
Parallel: No  
Firmware: Fujitsu BIOS Version V5.0.0.11 R1.25.0 for D3521-A1x Released Apr-2020  
File System: xfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: Not Applicable  
Other: None |
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**SPECrate®2017_fp_base = 10.5**  
**SPECrate®2017_fp_peak = Not Run**

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<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<td>503.bwaves_r</td>
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<td><strong>8.40</strong></td>
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<td><strong>405</strong></td>
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<tr>
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<td><strong>11.6</strong></td>
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<tr>
<td>526.blender_r</td>
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<td><strong>8.03</strong></td>
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<td>527.cam4_r</td>
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<td><strong>9.38</strong></td>
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<tr>
<td>538.imagick_r</td>
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<td>10.2</td>
<td><strong>486</strong></td>
<td><strong>10.2</strong></td>
<td>488</td>
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<tr>
<td>544.nab_r</td>
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<tr>
<td>549.fotonik3d_r</td>
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<td><strong>11.1</strong></td>
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<tr>
<td>554.roms_r</td>
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<td>428</td>
<td>7.42</td>
<td><strong>428</strong></td>
<td><strong>7.43</strong></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 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"  
echo always > /sys/kernel/mm/transparent_hugepage/enabled  
echo 1000000000 > /proc/sys/kernel/sched_min_granularity_ns  
echo 1500000000 > /proc/sys/kernel/sched_wakeup_granularity_ns

**Environment Variables Notes**

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
"/home/Benchmark/cpu2017-1.1.0/lib/ia32:/home/Benchmark/cpu2017-1.1.0/lib/intel64:/usr/local/je5.0.1-32:/usr/local/je5.0.1-64"
## General Notes

Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB 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:
`sync; echo 3> /proc/sys/vm/drop_caches`
runcpu command invoked through numactl i.e.:
`numactl --interleave=all runcpu <etc>`
Yes: 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:
Fan Control = Full

Sysinfo program `/home/Benchmark/cpu2017-1.1.0/bin/sysinfo`
Rev: r6365 of 2019-08-21 295195f888a3d7edbble6e46a485a0011
running on linux-1g42 Mon May 25 21:13:44 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) Celeron(R) CPU G3930E @ 2.90GHz
- 1 "physical id"s (chips)
- 2 "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 : 2
  - siblings : 2
  - physical 0: cores 0 1

From `/usr/cpuinfo`
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- Address sizes: 39 bits physical, 48 bits virtual
- CPU(s): 2
- On-line CPU(s) list: 0,1
- Thread(s) per core: 1

(Continued on next page)
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Platform Notes (Continued)

Core(s) per socket: 2
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
Model name: Intel(R) Celeron(R) CPU G3930E @ 2.90GHz
Stepping: 9
CPU MHz: 2900.000
CPU max MHz: 2900.0000
CPU min MHz: 800.0000
BogoMIPS: 5808.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 2048K
NUMA node0 CPU(s): 0,1
Flags: fpu vme de pse ts mcr 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 cpuid
aperfmpref tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx est tm2 ssse3 sdbg
cx16 xtrunc pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
rdseed lahf_lm abm 3dnowprefetch cpuid_fault epb invpcid_single pti ssbd ibrs ibpb
stibp tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust smep ibrms invvdpc
mpx rdseed smack clflushopt intel_pht xsaveopt xsavec xgetbv1 xsaveopt dtherm arat pfn
rts hwp hwp_notify hwp_act_window hwp_epp md_clear flush_l1d

/proc/cpuinfo cache data
  cache size : 2048 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
  node 0 size: 64038 MB
  node 0 free: 63605 MB
  node distances:
  node 0
    0: 10

From /proc/meminfo
  MemTotal: 65575380 KB
  HugePages_Total: 0
  Hugepagesize: 2048 KB

From /etc/*release*/etc/*version*

(Continued on next page)
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<tr>
<th>Platform Notes (Continued)</th>
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</table>

```plaintext
os-release:
  NAME="SLES"
  VERSION="15-SP1"
  VERSION_ID="15.1"
  PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
  ID="sles"
  ID_LIKE="suse"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:15:sp1"

uname -a:
  Linux linux-1g42 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019 (8fba516)
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

- CVE-2018-3620 (L1 Terminal Fault): Mitigation: PTE Inversion; VMX: conditional cache flushes, SMT disabled
- Microarchitectural Data Sampling: Mitigation: Clear CPU buffers; SMT disabled
- CVE-2017-5754 (Meltdown): Mitigation: PTI
- CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
- CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
- CVE-2017-5715 (Spectre variant 2): Mitigation: Indirect Branch Restricted Speculation, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling

run-level 3 May 25 17:28

SPEC is set to: /home/Benchmark/cpu2017-1.1.0
Filesystem Type Size Used Avail Use% Mounted on
/dev/md126p3 xfs 130G 34G 96G 26% /home

From /sys/devices/virtual/dmi/id
  BIOS: FUJITSU // American Megatrends Inc. V5.0.0.11 R1.25.0 for D3521-A1x
  04/06/2020
  Vendor: FUJITSU
  Product: PRIMERGY TX1310 M3
  Serial: YM9F000154

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 HMA82GU6AFR8N-UH 16 GB 2 rank 2400
```

(Continued on next page)
Platform Notes (Continued)

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
<table>
<thead>
<tr>
<th>C</th>
<th>519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)</th>
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<tr>
<td>Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,</td>
<td></td>
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<tr>
<td>Version 19.0.0.117 Build 20180804</td>
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<th>508.namd_r(base) 510.parest_r(base)</th>
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Compiler Version Notes (Continued)

Fortran             | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)
-----------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.0.117 Build 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
-----------------------------------------------

Base Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

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

Benchmarks using both C and C++:
icpc -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:
icpc -m64 icc -m64 -std=c11 ifort -m64

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64

(Continued on next page)
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Base Portability Flags (Continued)

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:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
-align array32byte

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
-align array32byte

Benchmarks using both C and C++:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:
-xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
-align array32byte

The flags files that were used to format this result can be browsed at
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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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