## SPEC CPU 2017 Floating Point Speed Result

### Fujitsu

**PRIMERGY TX1330 M4, Intel Celeron G4930, 3.20 GHz**

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.9</td>
<td>12.1</td>
</tr>
</tbody>
</table>

### CPU2017 License: 19

- **Test Date:** Dec-2019
- **Hardware Availability:** Oct-2019
- **Software Availability:** Sep-2019

### Tested by: Fujitsu

#### Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
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<tbody>
<tr>
<td>603.bwaves_s</td>
<td>2</td>
<td>0.0</td>
<td>57.6</td>
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<tr>
<td>607.cactuBSSN_s</td>
<td>2</td>
<td>14.6</td>
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<tr>
<td>619.lbm_s</td>
<td>2</td>
<td>9.32</td>
<td>14.6</td>
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<tr>
<td>621.wrf_s</td>
<td>2</td>
<td>12.0</td>
<td>14.2</td>
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<tr>
<td>627.cam4_s</td>
<td>2</td>
<td>7.50</td>
<td>12.1</td>
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<tr>
<td>628.pop2_s</td>
<td>2</td>
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<td>638.imagick_s</td>
<td>2</td>
<td>3.99</td>
<td>11.9</td>
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<tr>
<td>644.nab_s</td>
<td>2</td>
<td>11.9</td>
<td>11.9</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>2</td>
<td>9.77</td>
<td>15.6</td>
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<tr>
<td>654.roms_s</td>
<td>2</td>
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<td>15.6</td>
</tr>
</tbody>
</table>

#### Software

- **OS:** Red Hat Enterprise Linux Server release 7.6 (Maipo) 3.10.0-957.el7.x86_64
- **Compiler:**
  - C/C++: Version 19.0.5.281 of Intel C/C++ Compiler for Linux;
  - Fortran: Version 19.0.5.281 of Intel Fortran Compiler for Linux
- **Parallel:** Yes
- **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:** 64-bit
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage

### Hardware

- **CPU Name:** Intel Celeron G4930
- **Max MHz:** 3200
- **Nominal:** 3200
- **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
- **Other:** None
- **Memory:** 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E, running at 2400)
- **Storage:** 1 x SATA M.2 SSD, 480 GB
- **Other:** None
Fujitsu

PRIMERGY TX1330 M4, Intel Celeron G4930, 3.20 GHz

SPECspeed®2017_fp_base = 11.9
SPECspeed®2017_fp_peak = 12.1

Results Table

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<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>
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<th>Ratio</th>
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<tbody>
<tr>
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<tr>
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<td>1003</td>
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<tr>
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<td>7.51</td>
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<tr>
<td>628.pop2_s</td>
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<td>649.fotonik3d_s</td>
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<td>15.6</td>
<td>584</td>
<td>15.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-1.1.0/lib/ia32:/home/Benchmark/speccpu2017-1.1.0/lib/intel64:/home/Benchmark/speccpu2017-1.1.0/je5.0.1-32:/home/Benchmark/speccpu2017-1.1.0/je5.0.1-64"
OMP_STACKSIZE = "192M"

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-1.1.0/lib/intel64"
OMP_STACKSIZE = "192M"
echo 1000000000 > sched_min_granularity_ns
echo 1500000000 > sched_wakeup_granularity_ns
echo 2400000000 > sched_latency_ns
Binaries compiled on a system with 1x Intel Xeon E-2288G CPU + 64 GB RAM memory using Redhat Enterprise Linux 7.6 Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:

(Continued on next page)
SPEC CPU®2017 Floating Point Speed Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

Fujitsu
PRIMERGY TX1330 M4, Intel Celeron G4930, 3.20 GHz

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base = 11.9</th>
<th>SPECspeed®2017_fp_peak = 12.1</th>
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</thead>
</table>

CPU2017 License: 19  Test Date: Dec-2019
Test Sponsor: Fujitsu  Hardware Availability: Oct-2019
Tested by: Fujitsu  Software Availability: Sep-2019

General Notes (Continued)

sync; echo 3> /proc/sys/vm/drop_caches
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:
Energy Efficient Turbo = Disabled
Fan Control = Full

Sysinfo program /home/Benchmark/speccpu2017-1.1.0/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edbe6e46a485a0011
running on localhost.localdomain Mon Dec 16 17:47:51 2019

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) G4930 CPU @ 3.20GHz
  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 lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 2
On-line CPU(s) list: 0,1
Thread(s) per core: 1
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) G4930 CPU @ 3.20GHz

(Continued on next page)
Platform Notes (Continued)

Stepping: 11
CPU MHz: 3200.000
CPU max MHz: 3200.0000
CPU min MHz: 800.0000
BogoMIPS: 6384.00
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 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
aperfmpref eagerfpu pni pclmulqdq dtes64 monitor ds_cpl vmx est tm2 ssse3 sdbg x16
xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave rdrand
lahf_lm abm 3dnowprefetch epb intel_pt ssbd ibrs ibpb stibp tpr_shadow vnmi
flexpriority ept vpid fsgsbase tsc_adjust smep erms invpd msr pxe pmx rdseed smap
clflushopt xsaveopt xsavec xgetbv1 dtcmt arat pln pts hwp hwp_notify hwp_act_window
hwp_epp spec_ctrl intel_stibp flush_l1d

From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
physical chip.

From /proc/meminfo
MemTotal: 65726088 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
NAME="Red Hat Enterprise Linux Server"
VERSION="7.6 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.6"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.6 (Maipo)"
redhat-release: Red Hat Enterprise Linux release 7.6 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)

uname -a:

(Continued on next page)
**SPEC CPU®2017 Floating Point Speed Result**

**Fujitsu**

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---

**SPECspeed®2017_fp_base = 11.9**

**SPECspeed®2017_fp_peak = 12.1**

---

**Platform Notes (Continued)**

Linux localhost.localdomain 3.10.0-957.el7.x86_64 #1 SMP Thu Oct 4 20:48:51 UTC 2018

---

**CPU2017 License:** 19  
**Test Date:** Dec-2019

---

**Test Sponsor:** Fujitsu  
**Hardware Availability:** Oct-2019

---

**Tested by:** Fujitsu  
**Software Availability:** Sep-2019

---

### Kernel self-reported vulnerability status:

**CVE-2018-3620 (L1 Terminal Fault):**  
Mitigation: PTE Inversion; VMX: SMT disabled, L1D conditional cache flushes

**Microarchitectural Data Sampling:**  
No status reported

**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: Load fences, __user pointer sanitization

**CVE-2017-5715 (Spectre variant 2):**  
Mitigation: IBRS (kernel)

---

run-level 3 Dec 16 17:46

---

**SPEC is set to:** /home/Benchmark/speccpu2017-1.1.0

**Filesystem**

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>xfs</td>
<td>392G</td>
<td>44G</td>
<td>349G</td>
<td>12%</td>
<td>/home</td>
</tr>
</tbody>
</table>

---

From /sys/devices/virtual/dmi/id

**BIOS:** FUJITSU // American Megatrends Inc. V5.0.0.13 R1.12.0 for D3673-A1x  
**Vendor:** FUJITSU  
**Product:** PRIMERGY TX1320 M4  
**Serial:** YMJKXXXXXX

---

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, configured at 2400

---

(End of data from sysinfo program)

---

### Compiler Version Notes

---

Intel(R) C  
Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.5.281 Build 20190815

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### SPECspeed®2017_fp_peak = 12.1

#### Compiler Version Notes (Continued)

<table>
<thead>
<tr>
<th>Base Compiler Invocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++, C, Fortran</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.5.281 Build 20190815</th>
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<tr>
<th>Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.5.281 Build 20190815</th>
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<thead>
<tr>
<th>Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.5.281 Build 20190815</th>
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| Fortran | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(base, peak) |

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| Fortran, C | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak) |

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</table>

### Base Compiler Invocation

C benchmarks:

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

Fortran benchmarks:

```
ifort -m64
```
**Base Compiler Invocation (Continued)**

Benchmarks using both Fortran and C:

ifort -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:

icpc -m64 icc -m64 -std=c11 ifort -m64

**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:

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

Fortran benchmarks:

- -DSPEC_OPENMP -xSSE4.2 -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:

- -xSSE4.2 -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++:

- -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
- -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
- -nostandard-realloc-lhs -align array32byte
Fujitsu
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CPU2017 License: 19
Test Sponsor: Fujitsu
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Test Sponsor: Fujitsu
Test Date: Dec-2019

Peak Compiler Invocation

C benchmarks:
icc -m64 -std=c11
Fortran benchmarks:
ifort -m64

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

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

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
619.lbm_s: basepeak = yes
638.imagick_s: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-DSPEC_OPENMP

644.nab_s: Same as 638.imagick_s

Fortran benchmarks:
603.bwaves_s: -prof-gen(pass 1) -prof-use(pass 2) -DSPEC_SUPPRESS_OPENMP
-DSPEC_OPENMP -O2 -xSSE4.2 -qopt-prefetch -ipo -O3
-no-prec-div -ffinite-math-only -qopt-mem-layout-trans=3
-qopenmp -nostandard-realloc-lhs -align array32byte

649.fotonik3d_s: basepeak = yes
654.roms_s: -DSPEC_OPENMP -xSSE4.2 -ipo -O3 -no-prec-div
-qopt-prefetch -ffinite-math-only -qopt-mem-layout-trans=3
-qopenmp -nostandard-realloc-lhs -align array32byte

(Continued on next page)
Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

621.wrf_s: -prof-gen(pass 1) -prof-use(pass 2) -O2 -xSSE4.2
-qopt-prefetch -ipo -O3 -no-prec-div -ffinite-math-only
-qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte

627.cam4_s: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte

628.pop2_s: Same as 621.wrf_s

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

The flags files that were used to format this result can be browsed at:
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevD.html

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