**Fujitsu**

PRIMERGY TX1330 M4, Intel Pentium Gold G5400, 3.70GHz

| CPU2017 License | 19 |
| Test Sponsor | Fujitsu |
| Tested by | Fujitsu |
| Test Date | Nov-2018 |
| Hardware Availability | Nov-2018 |
| Software Availability | Sep-2018 |

### SPECspeed2017_fp_base

13.5

### SPECspeed2017_fp_peak

Not Run

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed2017_fp_base</th>
</tr>
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<tbody>
<tr>
<td>603.bwaves_s</td>
<td>13.6</td>
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<tr>
<td>607.cactuBSSN_s</td>
<td>13.6</td>
</tr>
<tr>
<td>619.ibm_s</td>
<td>14.0</td>
</tr>
<tr>
<td>621.wrf_s</td>
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<tr>
<td>627.cam4_s</td>
<td>8.41</td>
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<tr>
<td>628.pop2_s</td>
<td>13.6</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>13.6</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>11.0</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>11.0</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>11.0</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Pentium Gold G5400
- **Max MHz.:** 3700
- **Nominal:** 3700
- **Enabled:** 2 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:** 4 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, 240 GB
- **Other:** None

### Software

- **OS:** Red Hat Enterprise Linux Server release 7.5 (Maipo) 3.10.0-862.el7.x86_64
- **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:** Yes
- **Firmware:** Fujitsu BIOS Version V5.0.0.13 R1.4.0 for D3673-A1x. Released Nov-2018 tested as V5.0.0.13 R1.0.0 for D3673-A1x Sep-2018
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** Not Applicable
- **Other:** None
SPEC CPU2017 Floating Point Speed Result

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Test Sponsor: Fujitsu
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SPECspeed2017_fp_base = 13.5
SPECspeed2017_fp_peak = Not Run

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
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<th>Ratio</th>
<th>Seconds</th>
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<th>Ratio</th>
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<tr>
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<tr>
<td>644.nab_s</td>
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<td>10.9</td>
</tr>
</tbody>
</table>

SPECspeed2017_fp_base = 13.5
SPECspeed2017_fp_peak = Not Run

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"

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
OMP_STACKSIZE = "192M"
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-ic19/ic19.0-lib/intel64"

Binaries compiled on a system with 1x Intel Xeon E-2186G CPU + 64GB RAM memory using Red Hat Enterprise Linux Server release 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

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)

(Continued on next page)
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CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Nov-2018
Hardware Availability: Nov-2018
Software Availability: Sep-2018

General Notes (Continued)

is mitigated in the system as tested and documented.

Platform Notes

Sysinfo program /home/Benchmark/speccpu2017-ic19/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on localhost.localdomain Fri Nov  9 19:29:49 2018

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) Pentium(R) Gold G5400 CPU @ 3.70GHz
 1  "physical id"s (chips)
 4 "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 : 4
physical 0: cores 0 1

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 4
On-line CPU(s) list: 0-3
Thread(s) per core: 2
Core(s) per socket: 2
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
Model name: Intel(R) Pentium(R) Gold G5400 CPU @ 3.70GHz
Stepping: 11
CPU MHz: 3700.000
CPU max MHz: 3700.0000
CPU min MHz: 800.0000
BogoMIPS: 7392.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 256K
L3 cache: 4096K

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

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

**Platform Notes (Continued)**

NUMA node0 CPU(s): 0-3
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
            rdtsscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
            nonstop_tsc aperfmperf 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 xsaveopt xsavec xsaveopt xsavec
            xgetbv1 ibpb ibrs stibp dtherm arat pln pts hwp hwp_notify hwp_act_window
            hwp_epp spec_ctrl intel_stibp

/proc/cpuinfo cache data
   size : 4096 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
   node 0 size: 65278 MB
   node 0 free: 63243 MB
   node distances:
      node 0
      0: 10

From /proc/meminfo
   MemTotal:       65546112 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
   os-release:
      NAME="Red Hat Enterprise Linux Server"
      VERSION="7.5 (Maipo)"
      ID="rhel"
      ID_LIKE="fedora"
      VARIANT="Server"
      VARIANT_ID="server"
      VERSION_ID="7.5"
      PRETTY_NAME="Red Hat Enterprise Linux Server 7.5 (Maipo)"
      redhat-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
      system-release: Red Hat Enterprise Linux Server release 7.5 (Maipo)
      system-release-cpe: cpe:/o:redhat:enterprise_linux:7.5:ga:server

uname -a:
   Linux localhost.localdomain 3.10.0-862.el7.x86_64 #1 SMP Wed Mar 21 18:14:51 EDT 2018
   x86_64 x86_64 x86_64 GNU/Linux

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

**Fujitsu**

PRIMERGY TX1330 M4, Intel Pentium Gold G5400, 3.70GHz

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**SPECspeed2017_fp_base = 13.5**

**SPECspeed2017_fp_peak = Not Run**

### Platform Notes (Continued)

run-level 3 Nov 9 19:25

SPEC is set to: /home/Benchmark/speccpu2017-ic19

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 150G 67G 84G 45% /home

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 FUJITSU // American Megatrends Inc. V5.0.0.13 R1.0.0 for D3673-A1x 09/14/2018

Memory:

4x SK Hynix HMA82GU7CJR8N-VK 16 GB 2 rank 2667, configured at 2400

(End of data from sysinfo program)

### Compiler Version Notes

```
==============================================================================
CC  619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)
==============================================================================
icc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
FC  607.cactuBSSN_s(base)
==============================================================================
icpc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
FC  603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)
==============================================================================
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
==============================================================================
CC  621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(base)
```

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</tbody>
</table>

Compiler Version Notes (Continued)

ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985–2018 Intel Corporation. All rights reserved.
icc (ICC) 19.0.0.117 20180804
Copyright (C) 1985–2018 Intel Corporation. All rights reserved.

Base 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
```

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
```

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

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

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-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2017-12-21.xml
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0.2-CFL-RevB.xml

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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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