Fujitsu
PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

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

CPU Name: Intel Celeron G4900
Max MHz.: 3100
Nominal: 3100
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 HDD, 1TB, 7200RPM
Other: None

Software
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 V5.0.0.13 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: 64-bit
Other: None

SPECrate2017_fp_base = 11.6
SPECrate2017_fp_peak = 11.8
Fujitsu
PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

SPECrate2017_fp_base = 11.6
SPECrate2017_fp_peak = 11.8

Results Table

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<th>Benchmark</th>
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<th>Ratio</th>
<th>Copies</th>
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<td>503.bwaves_r</td>
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<td>8.33</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:
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-ic19-20181011/icc19-lib/intel64"

Binaries compiled on a system with 2x Intel Xeon E5-2667 v2 CPU + 64GB RAM
memory using SUSE Linux Enterprise Server 12 SP2
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesyste 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)

(Continued on next page)
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PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

SPECrate2017_fp_base = 11.6
SPECrate2017_fp_peak = 11.8

General Notes (Continued)

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/speccpu2017-1.0.2/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618b091c0f
running on TX1330M4 Fri Nov 9 20:36:18 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) Celeron(R) G4900 CPU @ 3.10GHz
  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) G4900 CPU @ 3.10GHz
Stepping: 11
CPU MHz: 3100.000
CPU max MHz: 3100.0000
CPU min MHz: 800.0000
BogoMIPS: 6192.00
Virtualization: VT-x

(Continued on next page)
Fujitsu
PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

SPECrate2017_fp_base = 11.6
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Platform Notes (Continued)

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 mca cmov
pat pse36 clflush dtc 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
aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx est tm2 ssse3 sdbg
cx16 xti pdc mcd sse2_1 sse2_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
rdxld v1 fast sfs base tsc_adjust smp erms inqup mpd mxrs mpx read seed smap
clfushopt intel perplex xsaveopt xsave xget_OP xsave xibp ibrs stibp dtherm arr pln
pts hwp hwp_notify hwp_act_window hwp_epp ssbd

/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: 63917 MB
  node 0 free: 63459 MB
  node distances:
    node 0
    0: 10

From /proc/meminfo
  MemTotal: 65451300 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

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 TX1330M4 4.12.14-23-default #1 SMP Tue May 29 21:04:44 UTC 2018 (cd0437b) x86_64
    x86_64 x86_64 GNU/Linux

(Continued on next page)
### Fujitsu

**PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz**

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>SPECrate2017_fp_peak</th>
</tr>
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<tbody>
<tr>
<td>11.6</td>
<td>11.8</td>
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</table>

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

### Platform Notes (Continued)

- run-level 3 Nov 9 14:05
- SPEC is set to: `/home/Benchmark/speccpu2017-1.0.2`
  - Filesystem | Type | Size | Used | Avail | Use% | Mounted on
  |----------|-----|-----|------|-------|------|----------------|
  | dev/sda3 | xfs | 828G | 111G | 718G   | 14%  | /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 HMA82GU6CJR8N-VK 16 GB 2 rank 2667, configured at 2400

### Compiler Version Notes

- **CC** `519.lbm_r(base)` `538.imagick_r(base, peak)` `544.nab_r(base)`
- **icc (ICC)** `19.0.0.117` `20180804`
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

- **CC** `519.lbm_r(peak)` `544.nab_r(peak)`
- **icc (ICC)** `19.0.0.117` `20180804`
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

- **CXXC** `508.namd_r(base)` `510.parest_r(base)`
- **icpc (ICC)** `19.0.0.117` `20180804`
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

- **CXXC** `508.namd_r(peak)` `510.parest_r(peak)`
- **icpc (ICC)** `19.0.0.117` `20180804`
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
Fujitsu
PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

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

SPECrate2017_fp_base = 11.6
SPECrate2017_fp_peak = 11.8

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

Compiler Version Notes (Continued)

==============================================================================
CC  511.povray_r(base) 526.blender_r(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.
==============================================================================
CC   511.povray_r(peak) 526.blender_r(peak)
==============================================================================
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.
==============================================================================
FC  507.cactuBSSN_r(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   507.cactuBSSN_r(peak)
==============================================================================
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  503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base)
==============================================================================
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

(Continued on next page)
Fujitsu

PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

SPECrate2017_fp_base = 11.6
SPECrate2017_fp_peak = 11.8

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

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

Compiler Version Notes (Continued)

------------------------------------------------------------------------------
FC  554.roms_r(peak)
------------------------------------------------------------------------------
ifort (IFORT) 19.0.0.117 20180804
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

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

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

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
Fujitsu
PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

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

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:
-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 -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 -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 -nostandard-realloc-lhs -align array32byte
SPEC CPU2017 Floating Point Rate Result

Fujitsu
PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

SPECrate2017_fp_base = 11.6
SPECrate2017_fp_peak = 11.8

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

Peak 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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
  519.lbm_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -O3
  -no-prec-div -qopt-prefetch -ffinite-math-only
  -qopt-mem-layout-trans=3
  538.imagick_r: -xSSE4.2 -ipo -O3 -no-prec-div -qopt-prefetch
  -ffinite-math-only -qopt-mem-layout-trans=3
  544.nab_r: Same as 519.lbm_r

C++ benchmarks:
  508.namd_r.basepeak = yes
  510.parest_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -O3
  -no-prec-div -qopt-prefetch -ffinite-math-only
  -qopt-mem-layout-trans=3

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

Fujitsu

PRIMERGY TX1320 M4, Intel Celeron G4900, 3.10GHz

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SPECrate2017_fp_peak = 11.8

CPU2017 License: 19
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Tested by: Fujitsu

Peak Optimization Flags (Continued)

Fortran benchmarks:

503.bwaves_r: basepeak = yes
549.fotonik3d_r: basepeak = yes
554.roms_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -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:

-no-prec-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -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++:

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xSSE4.2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: 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-RevA.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-RevA.xml

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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 2018-11-09 06:36:17-0500.
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