Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

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<th>SPECrate2017_fp_peak</th>
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<td>39.0</td>
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</table>

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

Hardware

CPU Name: Intel Xeon E-2176G
Max MHz.: 4700
Nominal: 3700
Enabled: 6 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: 12 MB I+D on chip per chip
Other: None
Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)
Storage: 1 x SATA HDD, 1TB, 7200RPM
Other: None

Software

OS: SUSE Linux Enterprise Server 15
4.12.14-23-default
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
**SPEC CPU2017 Floating Point Rate Result**

**Fujitsu**

PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrate2017_fp_base = 38.2

SPECrate2017_fp_peak = 39.0

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</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"

Process tuning settings:

```
  echo 500000 > /proc/sys/kernel/sched_cfs_bandwidth_slice_us
```

**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 Silver 4108 CPU + 384GB RAM memory using SUSE Linux Enterprise Server 12 SP2

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)
Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrate2017_fp_base = 38.2
SPECrate2017_fp_peak = 39.0

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

General Notes (Continued)

is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (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:
Hyper-Threading = Disabled
Software Guard Extensions (SGX) = Disabled
Fan Control = Full
Race To Halt (RTH) = Disabled
Energy Efficient Turbo = Disabled
Package C-State Un-demotion = Enabled
DMI Link ASPM Control = Disabled
Native PCIE Enable = Disabled
Sysinfo program /home/Benchmark/speccpu2017-ic19-20181011/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618b099c0f
running on TX1330M4 Tue Oct 16 20:19:40 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) Xeon(R) E-2176G CPU @ 3.70GHz
  1 "physical id"'s (chips)
    6 "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 : 6
siblings : 6
physical 0: cores 0 1 2 3 4 5

From lscpu:
Architecture:         x86_64
CPU op-mode(s):      32-bit, 64-bit
Byte Order:          Little Endian
CPU(s):              6
On-line CPU(s) list: 0-5
Thread(s) per core:  1
Core(s) per socket:  6
Socket(s):           1
NUMA node(s):        1
Vendor ID:           GenuineIntel

(Continued on next page)
Platform Notes (Continued)

CPU family:          6
Model:               158
Model name:          Intel(R) Xeon(R) E-2176G CPU @ 3.70GHz
Stepping:            10
CPU MHz:             3700.000
CPU max MHz:         4700.0000
CPU min MHz:         800.0000
BogoMIPS:            7392.00
Virtualization:      VT-x
L1d cache:           32K
L1i cache:           32K
L2 cache:            256K
L3 cache:            12288K
NUMA node0 CPU(s):   0-5
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 cpuid aperf perf米尔 tsc_known_freq pni pclmulqdq dtes64
                     monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pclid
                     sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx
                     f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb invpcid_single
                     pti tpr_shadow vmvi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle
                     avx2 smep bmi2  erts invpcid lvt三级 azure nid clflushopt intel_pt xsaveopt
                     xsaves ibpb ibrs ibrs stibp dtherm ida arat pln pts hwp hwp_notify hwp_act_window
                     hwp_epp ssbd

/proc/cpuinfo cache data
  cache size : 12288 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
    node 0 size: 63915 MB
    node 0 free: 63424 MB
    node distances:
      node 0
      0: 10

From /proc/meminfo
  MemTotal:      65449584 kB
  HugePages_Total:       0
  Hugepagesize:      2048 kB

From /etc/*release* /etc/*version*
  os-release:
    NAME="SLES"
    VERSION="15"

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

Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrate2017_fp_base = 38.2
SPECrate2017_fp_peak = 39.0

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

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

Platform Notes (Continued)

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

run-level 3 Oct 16 20:16

SPEC is set to: /home/Benchmark/speccpu2017-ic19-20181011
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 828G 102G 726G 13% /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 Samsung M391A2K43BB1-CTD 16 GB 2 rank 2667

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
CC  519.lbm_r(base) 538.imagick_r(base) 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) 538.imagick_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)

(Continued on next page)
Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPEC CPU2017 Floating Point Rate Result

SPECrate2017_fp_base = 38.2
SPECrate2017_fp_peak = 39.0

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

Compiler Version Notes (Continued)

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.

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.
iccc (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.
iccc (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.
iccc (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.
iccc (ICC) 19.0.0.117 20180804

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<td>Copyright (C) 1985-2018 Intel Corporation. All rights reserved.</td>
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Base Compiler Invocation

C benchmarks:
`icc -m64 -std=c11`

C++ benchmarks:
`icpc -m64`
Base Compiler Invocation (Continued)

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
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:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

C++ benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

Fortran benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
SPEC CPU2017 Floating Point Rate Result

Fujitsu
PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz

SPECrater2017_fp_base = 38.2
SPECrater2017_fp_peak = 39.0

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

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

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both C and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

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:

(Continued on next page)


Peak Optimization Flags (Continued)

519.lbm_r: basepeak = yes

538.imagick_r: basepeak = yes

544.nab_r: basepeak = yes

C++ benchmarks:

508.namd_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

510.parest_r: basepeak = yes

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

554.roms_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both Fortran and C:

-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

Benchmarks using both C and C++:

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -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
## SPEC CPU2017 Floating Point Rate Result

**Fujitsu**  
PRIMERGY TX1330 M4, Intel Xeon E-2176G, 3.70GHz  

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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-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 2018-10-16 07:19:40-0400.  