Fujitsu
PRIMERGY RX2540 M5, Intel Xeon Silver 4215, 2.50 GHz

SPECrate2017_fp_base = 108
SPECrate2017_fp_peak = Not Run

Hardware
CPU Name: Intel Xeon Silver 4215
Max MHz.: 3500
Nominal: 2500
Enabled: 16 cores, 2 chips, 2 threads/core
Orderable: 1.2 chips
Cache L1: 32 KB I + 32 KB D on chip per core
L2: 1 MB I+D on chip per core
L3: 11 MB I+D on chip per chip
Other: None
Memory: 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R, running at 2400)
Storage: 1 x SATA M.2 SSD, 240 GB
Other: None

Software
OS: SUSE Linux Enterprise Server 15
4.12.14-25.28-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 V5.0.0.14 R1.8.0 for D3384-B1x. Released Jun-2019 tested as V5.0.0.14 R1.2.0 for D3384-B1x Feb-2019
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: None
SPEC CPU2017 Floating Point Rate Result

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Fujitsu
PRIMERGY RX2540 M5, Intel Xeon Silver 4215, 2.50 GHz

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

SPECrate2017_fp_base = 108
SPECrate2017_fp_peak = Not Run

Results Table

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<tr>
<th>Benchmark</th>
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</tr>
</tbody>
</table>

SPECrate2017_fp_base = 108
SPECrate2017_fp_peak = Not Run

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"
Kernel Boot Parameter set with : nohz_full=1-111
Process tuning settings:
echo 10000000 > /proc/sys/kernel/sched_min_granularity_ns

General Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-1.0.5/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
Filesystem page cache synced and cleared with:
sync; echo 3 > /proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:
General Notes (Continued)

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:
Patrol Scrub = Disabled
WR CRC feature Control = Disabled
Fan Control = Full
Sub NUMA Clustering = Disabled
Sysinfo program /home/Benchmark/speccpu2017-1.0.5/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on RX2540M5 Wed Apr 24 10:19:05 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) Xeon(R) Silver 4215 CPU @ 2.50GHz
  2 "physical id"s (chips)
  32 "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 : 8
siblings : 16
physical 0: cores 0 1 2 3 4 5 6 7
physical 1: cores 0 1 2 3 4 5 6 7

From lscpu:
Architecture:      x86_64
CPU op-mode(s):    32-bit, 64-bit
Byte Order:        Little Endian
CPU(s):            32
On-line CPU(s) list: 0-31
Thread(s) per core: 2
Core(s) per socket: 8
Socket(s):         2
NUMA node(s):      2
Vendor ID:         GenuineIntel
CPU family:        6

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

**Fujitsu**  
**PRIMERGY RX2540 M5, Intel Xeon Silver 4215, 2.50 GHz**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Test Sponsor</td>
<td>Fujitsu</td>
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<tr>
<td>Tested by</td>
<td>Fujitsu</td>
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### Platform Notes (Continued)

<table>
<thead>
<tr>
<th>Model:</th>
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<tbody>
<tr>
<td>Model name:</td>
<td>Intel(R) Xeon(R) Silver 4215 CPU @ 2.50GHz</td>
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<tr>
<td>Stepping:</td>
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<tr>
<td>CPU MHz:</td>
<td>2500.000</td>
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<tr>
<td>CPU max MHz:</td>
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<td>CPU min MHz:</td>
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<td>BogoMIPS:</td>
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<td>Virtualization:</td>
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<td>L1d cache:</td>
<td>32K</td>
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<tr>
<td>L1i cache:</td>
<td>32K</td>
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<td>L2 cache:</td>
<td>1024K</td>
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<td>L3 cache:</td>
<td>11264K</td>
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<tr>
<td>NUMA node0 CPU(s):</td>
<td>0-7,16-23</td>
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<tr>
<td>NUMA node1 CPU(s):</td>
<td>8-15,24-31</td>
</tr>
<tr>
<td>Flags:</td>
<td>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 pdelgb rdtsscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3 invpcid_single ssbd mba ibrs ibpb ibrs_enhanced ftr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust blm1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsaveopt xsavec xsetb xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req pku ospke avx512_vnni flush_lld arch_capabilities</td>
</tr>
</tbody>
</table>

From /proc/cpuinfo cache data  
cache size : 11264 KB

From numactl --hardware  
**WARNING:** a numactl 'node' might or might not correspond to a physical chip.  
available: 2 nodes (0-1)  
node 0 cpus: 0 1 2 3 4 5 6 7 16 17 18 19 20 21 22 23  
node 0 size: 385475 MB  
node 0 free: 384963 MB  
node 1 cpus: 8 9 10 11 12 13 14 15 24 25 26 27 28 29 30 31  
node 1 size: 386857 MB  
node 1 free: 386370 MB  
node distances:  
node 0 1  
0: 10 21  
1: 21 10

From /proc/meminfo  
MemTotal: 790868228 kB  
HugePages_Total: 0

---

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

**Fujitsu**

PRIMERGY RX2540 M5, Intel Xeon Silver 4215, 2.50 GHz

**SPECrate2017_fp_base** = **108**

**SPECrate2017_fp_peak** = **Not Run**

<table>
<thead>
<tr>
<th>CPU2017 License</th>
<th>Test Date</th>
<th>Test Sponsor</th>
<th>Hardware Availability</th>
</tr>
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<tbody>
<tr>
<td>19</td>
<td>Apr-2019</td>
<td>Fujitsu</td>
<td>May-2019</td>
</tr>
<tr>
<td>Tested by</td>
<td>Hulu</td>
<td>Fujitsu</td>
<td>Feb-2019</td>
</tr>
</tbody>
</table>

**Platform Notes (Continued)**

```
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 RX2540M5 4.12.14-25.28-default #1 SMP Wed Jan 16 20:00:47 UTC 2019 (dd6077c)
  x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2017-5754 (Meltdown): Not affected
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

run-level 3 Apr 24 10:18

SPEC is set to: /home/Benchmark/speccpu2017-1.0.5
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda5 xfs 191G 57G 135G 30% /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. V5.0.0.14 R1.2.0 for D3384-B1x 02/28/2019
Memory:
  24x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2400

(End of data from sysinfo program)

--- Compiler Version Notes ---

CC 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)

(Continued on next page)
Fujitsu
PRIMERGY RX2540 M5, Intel Xeon Silver 4215, 2.50 GHz

SPECrate2017_fp_base = 108
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CPU2017 License: 19
Test Sponsor: Fujitsu
Tested by: Fujitsu

Test Date: Apr-2019
Hardware Availability: May-2019
Software Availability: Feb-2019

Compiler Version Notes (Continued)

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.
------------------------------------------------------------------------------
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.
------------------------------------------------------------------------------
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
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ifort (IFORT) 19.0.0.117 20180804
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**Tested by:** Fujitsu  
**Test Date:** Apr-2019  
**Hardware Availability:** May-2019  
**Software Availability:** Feb-2019

### 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`
- `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`

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

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Software Availability: Feb-2019

Base Optimization Flags (Continued)

C++ benchmarks (continued):
-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

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

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

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Fujitsu-Platform-Settings-V1.0-CSL-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 v1.0.5 on 2019-04-23 21:19:04-0400.
Report generated on 2019-05-23 13:00:23 by CPU2017 PDF formatter v6067.