## SPEC® CPU2017 Integer Rate Result

**Fujitsu**

PRIMERGY RX2530 M5, Intel Xeon Gold 6252, 2.10GHz

| SPECrate2017_int_base | 266 |
|---------------------------------|
| SPECrate2017_int_peak | Not Run |

**CPU2017 License:** 19  
**Test Sponsor:** Fujitsu  
**Tested by:** Fujitsu  
**Test Date:** Apr-2019  
**Hardware Availability:** May-2019  
**Software Availability:** Feb-2019

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**Hardware**

- **CPU Name:** Intel Xeon Gold 6252  
- **Max MHz.:** 3700  
- **Nominal:** 2100  
- **Enabled:** 48 cores, 2 chips, 2 threads/core  
- **Orderable:** 1.2 chips  
- **Cache L1:** 32 KB I + 32 KB D on chip per core  
- **Cache L2:** 1 MB I+D on chip per core  
- **Cache L3:** 35.75 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R)  
- **Storage:** 1 x SATA M.2 SSD, 240GB  
- **Other:** None

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**Software**

- **OS:** SUSE Linux Enterprise Server 15  
  4.12.14-25.28-default  
- **Compiler:** C/C++: Version 19.0.1.144 of Intel C/C++  
  Compiler Build 20181018 for Linux;  
  Fortran: Version 19.0.1.144 of Intel Fortran  
  Compiler Build 20181018 for Linux  
- **Parallel:** No  
- **Firmware:** Fujitsu BIOS Version V5.0.0.14 R1.8.0 for D3383-B1x. Released Jun-2019 tested as V5.0.0.14 R1.2.0 for D3383-B1x Feb-2019  
- **File System:** xfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** Not Applicable  
- **Other:** None

---

### Performance Results

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Copies</th>
<th>SPECrate2017_int_base</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>96</td>
<td>502.gcc_r</td>
</tr>
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<td>520.omnetpp_r</td>
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<td>182</td>
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<td>523.xalanbmk_r</td>
<td>96</td>
<td>292</td>
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<tr>
<td>525.x264_r</td>
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Fujitsu
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CPU2017 License: 19
Test Sponsor: Fujitsu
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Results Table

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<tr>
<th>Benchmark</th>
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</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"
Kernel Boot Parameter set with : nohz_full=1-111

General Notes
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/Benchmark/speccpu2017-1.0.5/lib/intel64"
Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB RAM memory using Redhat Enterprise Linux 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
runcpu command invoked through numactl i.e.:
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.

(Continued on next page)
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PRIMERGY RX2530 M5, Intel Xeon Gold 6252, 2.10GHz  

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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

### General Notes (Continued)

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  
- DCU Ip Prefetcher = Disabled  
- DCU Streamer Prefetcher = Disabled  
- Fan Control = Full  
- Stale AtoS = Enable  
- WR CRC feature Control = Disabled

**Sysinfo program** /home/Benchmark/speccpu2017-1.0.5/bin/sysinfo  
**Rev:** r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9  
**running on RX2530M5 Mon Apr 1 11:10:45 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](https://www.spec.org/cpu2017/Docs/config.html#sysinfo)

From `/proc/cpuinfo`

- model name: Intel(R) Xeon(R) Gold 6252 CPU @ 2.10GHz  
- 2 "physical id"s (chips)  
- 96 "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: 24  
  - siblings: 48  
  - physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 25 26 27 28 29  
  - physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 25 26 27 28 29

From `lscpu`:

- Architecture: x86_64  
- CPU op-mode(s): 32-bit, 64-bit  
- Byte Order: Little Endian  
- CPU(s): 96  
- On-line CPU(s) list: 0-95  
- Thread(s) per core: 2  
- Core(s) per socket: 24  
- Socket(s): 2  
- NUMA node(s): 4  
- Vendor ID: GenuineIntel  
- CPU family: 6  
- Model: 85  
- Model name: Intel(R) Xeon(R) Gold 6252 CPU @ 2.10GHz  
- Stepping: 6

(Continued on next page)
### Fujitsu

PRIMERGY RX2530 M5, Intel Xeon Gold 6252, 2.10GHz

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**Platform Notes (Continued)**

```
CPU MHz:             2100.000
CPU max MHz:         3700.0000
CPU min MHz:         1000.0000
BogoMIPS:            4200.00
Virtualization:      VT-x
L1d cache:           32K
L1i cache:           32K
L2 cache:            1024K
L3 cache:            36608K
NUMA node0 CPU(s):   0-3,7-9,13-15,19,20,48-51,55-57,61-63,67,68
NUMA node1 CPU(s):   4-6,10-12,16-18,21-23,52-54,58-60,64-66,69-71
NUMA node2 CPU(s):   24-27,31-33,37-39,43,44,72-75,79-81,85-87,91,92
NUMA node3 CPU(s):   28-30,34-36,40-42,45-47,76-78,82-84,88-90,93-95
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 pdelgb rdtscp
                     lm constant_tsc art arch_perfmon pebs bts rep_good nop1 xtopology nonstop_tsc cpuid
                     aperfmpref pni pcmulqdq dtss64 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 3nowprefetch cpuid_fault epb cat_l3 cdp_l3
                     invpcid_single ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vni flexpriority
                     ept vpid fsgsbase tsc_adjust bm1 hle avx2 smep bmi2 erms invpcid rtm cqm mpx rt_a
                     avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl
                     xsaveopt xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local
                     dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req pku ospke avx512_vnni
                     flush_l1d arch_capabilities

/proc/cpuinfo cache data
  cache size : 36608 KB

From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a
physical chip.
  available: 4 nodes (0-3)
  node 0 cpus: 0 1 2 3 7 8 9 13 14 15 19 20 48 49 50 51 55 56 57 61 62 63 67 68
  node 0 size: 191937 MB
  node 0 free: 191489 MB
  node 1 cpus: 4 5 6 10 11 12 16 17 18 21 22 23 52 53 54 58 59 60 64 65 66 69 70 71
  node 1 size: 193531 MB
  node 1 free: 193235 MB
  node 2 cpus: 24 25 26 27 31 32 33 37 38 39 43 44 72 73 74 75 79 80 81 85 86 87 91 92
  node 2 size: 193531 MB
  node 2 free: 193225 MB
  node 3 cpus: 28 29 30 34 35 36 40 41 42 45 46 47 76 77 78 82 83 84 88 89 90 93 94 95
  node 3 size: 193318 MB
  node 3 free: 193049 MB
  node distances:
      node 0 1 2 3
    0: 10 11 21 21
```

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SPEC CPU2017 Integer Rate Result

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Platform Notes (Continued)

From /proc/meminfo
MemTotal: 790854800 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 RX2530M5 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 1 11:09

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 D3383-B1x
02/28/2019
Memory:
24x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2934

(End of data from sysinfo program)
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Compiler Version Notes
==============================================================================
 CC  500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base)
     557.xz_r(base)
------------------------------------------------------------------------------
Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==============================================================================
CXX C 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
     541.leela_r(base)
------------------------------------------------------------------------------
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
==============================================================================
 FC  548.exchange2_r(base)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.1.144 Build 20181018
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

Base Portability Flags
500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
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- 523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
- 525.x264_r: -DSPEC_LP64
- 531.deepsjeng_r: -DSPEC_LP64
- 541.leela_r: -DSPEC_LP64
- 548.exchange2_r: -DSPEC_LP64
- 557.xz_r: -DSPEC_LP64

### Base Optimization Flags

**C benchmarks:**
- -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
- -qopt-mem-layout-trans=4
- -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
- -lqkmalloc

**C++ benchmarks:**
- -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
- -qopt-mem-layout-trans=4
- -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
- -lqkmalloc

**Fortran benchmarks:**
- -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
- -qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
- -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
- -lqkmalloc

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:


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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 2019-03-31 22:10:44-0400.