### SPEC CPU®2017 Integer Rate Result

**Fujitsu**

PRIMERGY CX2560 M5, Intel Xeon Gold 6252, 2.10 GHz

| SPECrate®2017_int_base = | 258 |
| SPECrate®2017_int_peak = | Not Run |

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

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

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<tr>
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<td>96</td>
<td>177</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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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  
**Memory:** 384 GB (12 x 32 GB 2Rx4 PC4-2933Y-R)  
**Storage:** 1 x SATA M.2 SSD, 128 GB  
**Other:** None

### Software

**OS:** SUSE Linux Enterprise Server 15  
**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 V1.0.0.0 R1.6.0 for D3854-B1x, released Jun-2019. Tested as V1.0.0.0 R1.3.3 for D3854-B1x Mar-2019  
**File System:** btrfs  
**System State:** Run level 3 (multi-user)  
**Base Pointers:** 64-bit  
**Peak Pointers:** Not Applicable  
**Other:** None  
**Power Management:** --
Fujitsu
PRIMERGY CX2560 M5, Intel Xeon Gold 6252, 2.10 GHz

CPU2017 License: 19
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<td>586</td>
<td>177</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"
Kernel Boot Parameter set with : nohz_full=1-95

General Notes
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "'/home/Benchmark/speccpu2017-1.0.5_rate_int/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>

NA: 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)
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:
Adjacent Cache Line Prefetch = Disabled
DCU Ip Prefetcher = Disabled
DCU Streamer Prefetcher = Disabled
Power Technology = Custom
Energy Performance = Balanced Performance
Uncore Frequency Scaling = Disabled
Sub NUMA Clustering = Enabled
Stale AtoS = Enable
LLC Prefetch = Enabled
Sysinfo program /home/Benchmark/speccpu2017-1.0.5_rate_int/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on linux-5cpq Tue Apr 23 17:28:56 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) 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

(Continued on next page)
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SPECraten®2017_int_base = 258
SPECraten®2017_int_peak = Not Run

CPU2017 License: 19
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Software Availability: Feb-2019

Platform Notes (Continued)

CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6252 CPU @ 2.10GHz
Stepping: 6
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): 4-6,10-12,16-18,21-23,52-55,58-60,64-66,69-71
NUMA node2 CPU(s): 24-27,31-33,37-39,43,44,75-77,79-81,85-87,91,92
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 pdelggb rdtscp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
aperfmpref 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 intel_ppln ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vmmi
flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 3dnow invpcid rtm
cqm mpx rdt_a avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd
avx512bw avx512vl xsaveopt xsavec xgetbv1 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: 95452 MB
node 0 free: 95116 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: 96726 MB
node 1 free: 96443 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: 96756 MB
node 2 free: 96523 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: 96753 MB

(Continued on next page)
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SPECrater®2017_int_peak = Not Run

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Platform Notes (Continued)

node 3 free: 96519 MB
node distances:
node 0 1 2 3
0: 10 11 19 19
1: 11 10 19 19
2: 19 19 10 11
3: 19 19 11 10

From /proc/meminfo
MemTotal: 394945224 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
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 linux-5cpq 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 23 17:24

SPEC is set to: /home/Benchmark/speccpu2017-1.0.5_rate_int
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 btrfs 117G 48G 69G 41% /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 V1.0.0.0 R1.3.3 for D3854-B1x 03/15/2019
Memory:

(Continued on next page)
Fujitsu
PRIMERGY CX2560 M5, Intel Xeon Gold 6252, 2.10 GHz

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

Platform Notes (Continued)

12x Micron 36ASF4G72PZ-2G9E2 32 GB 2 rank 2933
4x Not Specified Not Specified

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C       | 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.

==============================================================================
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.

==============================================================================
Fortran | 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
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**Base Portability Flags**

- 500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64  
- 502.gcc_r: -DSPEC_LP64  
- 505.mcf_r: -DSPEC_LP64  
- 520.omnetpp_r: -DSPEC_LP64  
- 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=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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SPECrate®2017_int_base = 258
SPECrate®2017_int_peak = Not Run

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU®2017 v1.0.5 on 2019-04-23 04:28:55-0400.