SPEC® CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Huawei

SPECrate2017_int_base =   117

Huawei 5288 V5 (Intel Xeon Gold 5215L)

SPECrate2017_int_peak = Not Run
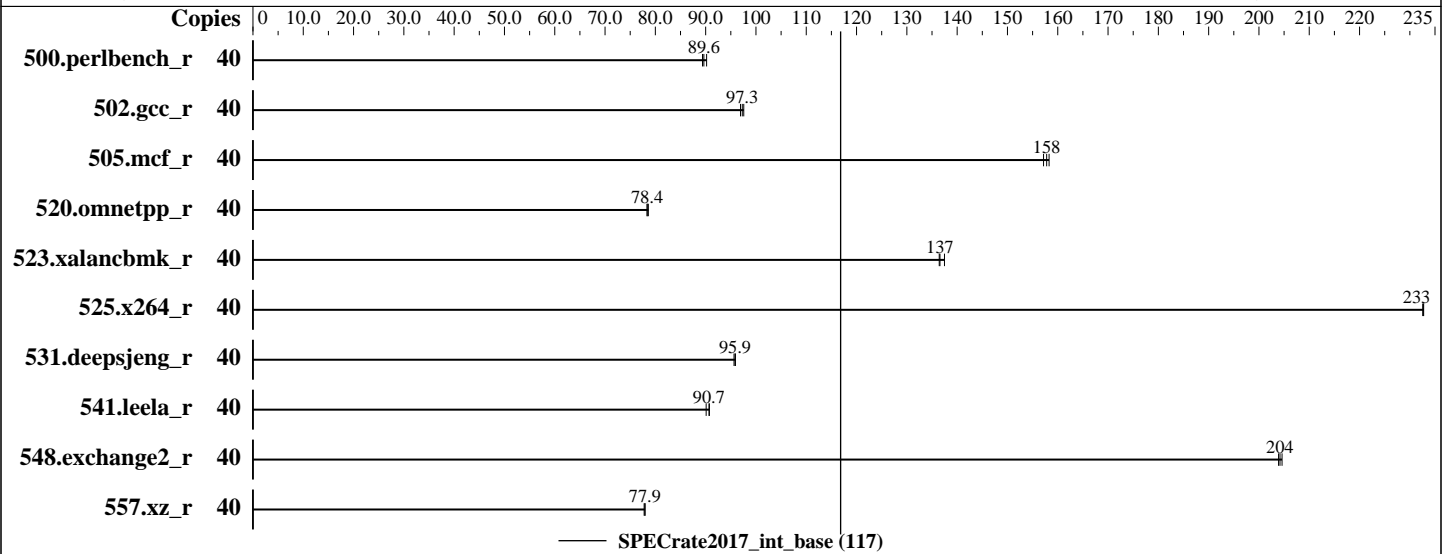
CPU2017 License: 3175

Test Sponsor: Huawei

Tested by: Huawei

Test Date: Apr-2019

Hardware Availability: Apr-2019

Software Availability: Dec-2018

Copies	Value
500.perlbench_r 40	89.6
502.gcc_r 40	97.3
505.mcf_r 40	158
520.omnetpp_r 40	78.4
523.xalancbmk_r 40	137
525.x264_r 40	233
531.deepsjeng_r 40	95.9
541.leela_r 40	90.7
548.exchange2_r 40	204
557.xz_r 40	77.9

——— SPECrate2017_int_base (117)

Hardware

CPU Name: Intel Xeon Gold 5215L

 Max MHz.: 3400

 Nominal: 2500

Enabled: 20 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: 13.75 MB I+D on chip per chip

 Other: None

Memory: 384 GB (24 x 16 GB 2Rx8 PC4-2933Y-R, running at 2666)

Storage: 1 x 1200 GB SAS, 10000 RPM

Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP4 (x86_64)
4.12.14-94.41-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: Version 6.52 Released Mar-2019

File System: xfs

System State: Run level 3 (multi-user)

Base Pointers: 64-bit

Peak Pointers: Not Applicable

Other: None

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Huawei

Huawei 5288 V5 (Intel Xeon Gold 5215L)

SPECrate2017_int_base = 117

SPECrate2017_int_peak = Not Run

CPU2017 License: 3175
Test Sponsor: Huawei
Tested by: Huawei

Test Date: Apr-2019
Hardware Availability: Apr-2019
Software Availability: Dec-2018

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	40	**710**	**89.6**	713	89.4	706	90.2							
502.gcc_r	40	**582**	**97.3**	580	97.6	584	96.9							
505.mcf_r	40	408	158	411	157	**410**	**158**							
520.omnetpp_r	40	668	78.6	670	78.4	**670**	**78.4**							
523.xalancbmk_r	40	**309**	**137**	310	136	307	137							
525.x264_r	40	**301**	**233**	301	233	301	233							
531.deepsjeng_r	40	478	95.9	479	95.6	**478**	**95.9**							
541.leela_r	40	**731**	**90.7**	730	90.7	735	90.1							
548.exchange2_r	40	**513**	**204**	514	204	512	205							
557.xz_r	40	554	77.9	**554**	**77.9**	556	77.8							
SPECrate2017_int_base =	**117**													
SPECrate2017_int_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"

General Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/spec/lib/ia32:/spec/lib/intel64:/spec/je5.0.1-32:/spec/je5.0.1-64"

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.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)

(Continued on next page)

SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Huawei

Huawei 5288 V5 (Intel Xeon Gold 5215L)

SPECrate2017_int_base =   117

SPECrate2017_int_peak = Not Run

CPU2017 License: 3175
Test Sponsor: Huawei
Tested by: Huawei

Test Date: Apr-2019
Hardware Availability: Apr-2019
Software Availability: Dec-2018

General Notes (Continued)

is mitigated in the system as tested and documented.

Platform Notes

```
BIOS configuration:
Power Policy Set to Performance
SNC Set to Enabled
IMC Interleaving Set to 1-way Interleave
XPT Prefetch Set to Enabled
Sysinfo program /spec/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on sles12sp4 Wed Apr 24 15:40:27 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 5215L CPU @ 2.50GHz
      2  "physical id"s (chips)
      40 "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 : 10
      siblings  : 20
      physical 0: cores 0 1 2 3 4 8 9 10 11 12
      physical 1: cores 0 1 2 3 4 8 9 10 11 12

From lscpu:
     Architecture:          x86_64
     CPU op-mode(s):        32-bit, 64-bit
     Byte Order:            Little Endian
     CPU(s):                40
     On-line CPU(s) list:   0-39
     Thread(s) per core:    2
     Core(s) per socket:    10
     Socket(s):             2
     NUMA node(s):          2
     Vendor ID:             GenuineIntel
     CPU family:            6
     Model:                 85
     Model name:            Intel(R) Xeon(R) Gold 5215L CPU @ 2.50GHz
     Stepping:              6
     CPU MHz:               2500.000
     CPU max MHz:           3400.0000
     CPU min MHz:           1000.0000
```

(Continued on next page)

Huawei

Huawei 5288 V5 (Intel Xeon Gold 5215L)

SPECrate2017_int_base =   117

SPECrate2017_int_peak =   Not Run

CPU2017 License: 3175

Test Sponsor: Huawei

Tested by: Huawei

Test Date: Apr-2019

Hardware Availability: Apr-2019

Software Availability: Dec-2018

Platform Notes (Continued)

```
      BogoMIPS:               5000.00
      Virtualization:         VT-x
      L1d cache:              32K
      L1i cache:              32K
      L2 cache:               1024K
      L3 cache:               14080K
      NUMA node0 CPU(s):      0-9,20-29
      NUMA node1 CPU(s):      10-19,30-39
      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 rdtscp
   lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
   aperfmperf pni pclmulqdq dtes64 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 stibp tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1
   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 xgetbv1 xsaves
   cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln pts pku ospke
   avx512_vnni flush_l1d arch_capabilities

 /proc/cpuinfo cache data
    cache size : 14080 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 8 9 20 21 22 23 24 25 26 27 28 29
   node 0 size: 191932 MB
   node 0 free: 168263 MB
   node 1 cpus: 10 11 12 13 14 15 16 17 18 19 30 31 32 33 34 35 36 37 38 39
   node 1 size: 193249 MB
   node 1 free: 177352 MB
   node distances:
   node   0   1
     0:  10  21
     1:  21  10

 From /proc/meminfo
    MemTotal:       394426740 kB
    HugePages_Total:        0
    Hugepagesize:        2048 kB

 From /etc/*release* /etc/*version*
    SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12
      PATCHLEVEL = 4
```

(Continued on next page)

SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Huawei

SPECrate2017_int_base =   117

Huawei 5288 V5 (Intel Xeon Gold 5215L)

SPECrate2017_int_peak = Not Run

CPU2017 License: 3175   **Test Date:**   Apr-2019
Test Sponsor: Huawei   **Hardware Availability:** Apr-2019
Tested by: Huawei   **Software Availability:** Dec-2018

Platform Notes (Continued)

```
      # This file is deprecated and will be removed in a future service pack or release.
      # Please check /etc/os-release for details about this release.
   os-release:
      NAME="SLES"
      VERSION="12-SP4"
      VERSION_ID="12.4"
      PRETTY_NAME="SUSE Linux Enterprise Server 12 SP4"
      ID="sles"
      ANSI_COLOR="0;32"
      CPE_NAME="cpe:/o:suse:sles:12:sp4"

 uname -a:
    Linux sles12sp4 4.12.14-94.41-default #1 SMP Wed Oct 31 12:25:04 UTC 2018 (3090901)
    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: Indirect Branch Restricted Speculation,
 IBPB, IBRS_FW

 run-level 3 Apr 23 02:18

 SPEC is set to: /spec
    Filesystem      Type  Size  Used Avail Use% Mounted on
    /dev/sda3       xfs   849G   96G  754G  12% /

 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 INSYDE Corp. 6.52 03/16/2019
   Memory:
    24x Samsung M393A2K43CB2-CVF 16 GB 2 rank 2933, configured at 2666

 (End of data from sysinfo program)
```

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
```

(Continued on next page)

SPEC CPU2017 Integer Rate Result

Huawei

Huawei 5288 V5 (Intel Xeon Gold 5215L)

SPECrate2017_int_base =   117

SPECrate2017_int_peak =   Not Run

CPU2017 License: 3175

Test Sponsor: Huawei

Tested by: Huawei

Test Date: Apr-2019

Hardware Availability: Apr-2019

Software Availability: Dec-2018

Compiler Version Notes (Continued)

```
Copyright (C) 1985-2018 Intel Corporation.  All rights reserved.
-------------------------------------------------------------------------

==========================================================================
 CXXC 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`
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`

Huawei

Huawei 5288 V5 (Intel Xeon Gold 5215L)

SPECrate2017_int_base = 117

SPECrate2017_int_peak =   Not Run

CPU2017 License: 3175
Test Sponsor: Huawei
Tested by: Huawei

Test Date: Apr-2019
Hardware Availability: Apr-2019
Software Availability: Dec-2018

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
  http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.html
  http://www.spec.org/cpu2017/flags/Huawei-Platform-Settings-SKL-V1.9-revC.html

You can also download the XML flags sources by saving the following links:
  http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.xml
  http://www.spec.org/cpu2017/flags/Huawei-Platform-Settings-SKL-V1.9-revC.xml

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 2019-04-24 15:40:26-0400.
Report generated on 2019-05-15 13:27:52 by CPU2017 PDF formatter v6067.
Originally published on 2019-05-14.