



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei

(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

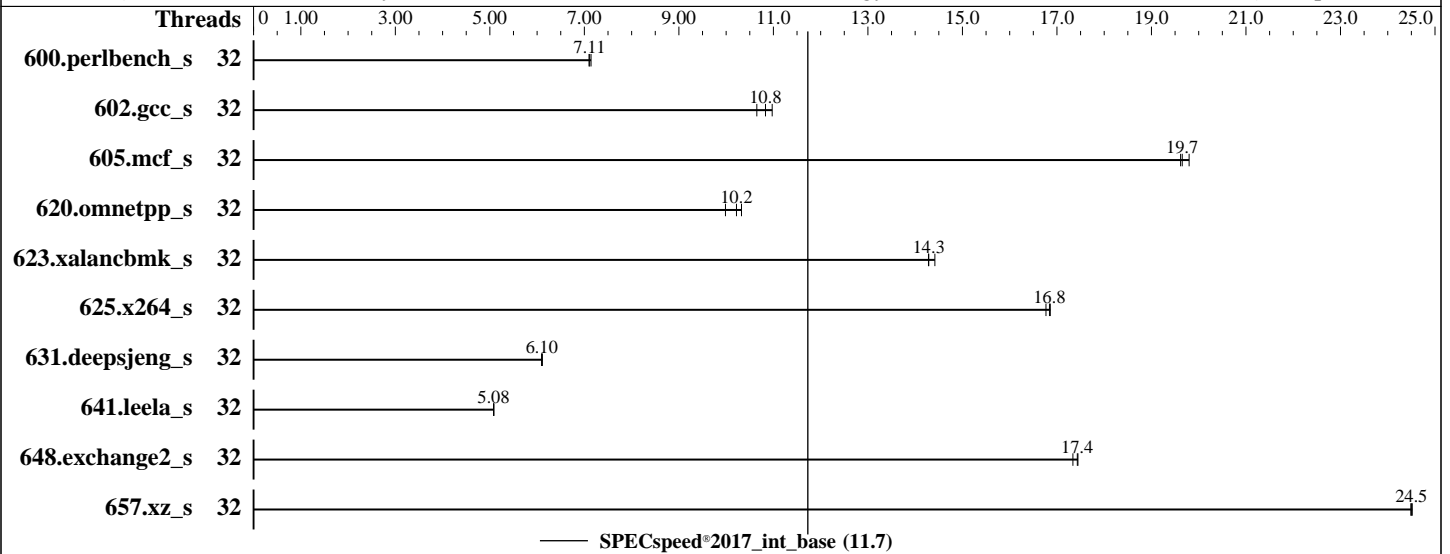
Test Sponsor: China Academy of Information and Communications Technology

Tested by: China Academy of Information and Communications Technology

Test Date: Jan-2021

Hardware Availability: Jul-2020

Software Availability: Apr-2020



Hardware

CPU Name: Intel Xeon Gold 6246R
 Max MHz: 4100
 Nominal: 3400
 Enabled: 32 cores, 2 chips
 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: 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 960 GB SSD
 Other: None

Software

OS: SUSE Linux Enterprise Server 12 SP4 (x86_64)
 Kernel 4.12.14-94.41-default
 Compiler: C/C++: Version 19.1.1.217 of Intel C/C++ Compiler for Linux;
 Fortran: Version 19.1.1.217 of Intel Fortran Compiler for Linux
 Parallel: Yes
 Firmware: Version 6.83 released Jun-2019
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 Other: jemalloc memory allocator V5.0.1
 Power Management: BIOS set to prefer performance at the cost of additional power usage.



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei

(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

Test Sponsor: China Academy of Information and Communications Technology

Tested by: China Academy of Information and Communications Technology

Test Date: Jan-2021

Hardware Availability: Jul-2020

Software Availability: Apr-2020

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	32	249	7.14	250	7.10	<u>250</u>	<u>7.11</u>							
602.gcc_s	32	368	10.8	363	11.0	374	10.6							
605.mcf_s	32	238	19.8	241	19.6	<u>240</u>	<u>19.7</u>							
620.omnetpp_s	32	163	9.99	158	10.3	<u>160</u>	<u>10.2</u>							
623.xalancbmk_s	32	98.3	14.4	99.2	14.3	<u>99.2</u>	<u>14.3</u>							
625.x264_s	32	105	16.9	<u>105</u>	<u>16.8</u>	105	16.8							
631.deepsjeng_s	32	235	6.10	234	6.11	235	6.09							
641.leela_s	32	335	5.09	336	5.08	336	5.08							
648.exchange2_s	32	169	17.4	169	17.4	170	17.3							
657.xz_s	32	252	24.5	252	24.5	<u>252</u>	<u>24.5</u>							

SPECspeed®2017_int_base = 11.7

SPECspeed®2017_int_peak = Not Run

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler. The correct version of C/C++ compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux. The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH =
"/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64:/usr/local/jemalloc64-5.0.1"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"

General Notes

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
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei
(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

Test Date: Jan-2021

Test Sponsor: China Academy of Information and Communications Technology

Hardware Availability: Jul-2020

Tested by: China Academy of Information and Communications Technology

Software Availability: Apr-2020

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.

jemalloc, a general purpose malloc implementation

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

Platform Notes

BIOS configuration:

Power Policy Set to Load Balance

Hyper-Threading Set to Disabled

XPT Prefetch Set to Enabled

Sysinfo program /spec2017/bin/sysinfo

Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011

running on linux-j3dr Fri Feb 19 10:50:35 2021

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 6246R CPU @ 3.40GHz

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 : 16

siblings : 16

physical 0: cores 0 2 3 5 6 9 10 12 13 16 18 20 21 24 27 29

physical 1: cores 0 2 3 5 6 9 10 12 13 16 18 20 21 24 27 29

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: 1

Core(s) per socket: 16

Socket(s): 2

NUMA node(s): 2

Vendor ID: GenuineIntel

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei

(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

Test Sponsor: China Academy of Information and Communications Technology

Tested by: China Academy of Information and Communications Technology

Test Date: Jan-2021

Hardware Availability: Jul-2020

Software Availability: Apr-2020

Platform Notes (Continued)

```

CPU family:           6
Model:                85
Model name:           Intel(R) Xeon(R) Gold 6246R CPU @ 3.40GHz
Stepping:             7
CPU MHz:              3400.000
CPU max MHz:          4100.0000
CPU min MHz:          1200.0000
BogoMIPS:             6800.00
Virtualization:       VT-x
L1d cache:            32K
L1i cache:            32K
L2 cache:             1024K
L3 cache:             36608K
NUMA node0 CPU(s):   0-15
NUMA node1 CPU(s):   16-31
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
aperfmpperf 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 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_lld 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: 2 nodes (0-1)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
node 0 size: 385580 MB
node 0 free: 384962 MB
node 1 cpus: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
node 1 size: 387036 MB
node 1 free: 386630 MB
node distances:
node  0  1
  0:  10  21
  1:  21  10

```

```

From /proc/meminfo
MemTotal:       791159920 kB
HugePages_Total:       0

```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei
(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

Test Date: Jan-2021

Test Sponsor: China Academy of Information and Communications Technology

Hardware Availability: Jul-2020

Tested by: China Academy of Information and Communications Technology

Software Availability: Apr-2020

Platform Notes (Continued)

Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*

SuSE-release:

SUSE Linux Enterprise Server 12 (x86_64)

VERSION = 12

PATCHLEVEL = 4

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 linux-j3dr 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-2018-3620 (L1 Terminal Fault):

Not affected

Microarchitectural Data Sampling:

No status reported

CVE-2017-5754 (Meltdown):

Not affected

CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp

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 Feb 19 10:45

SPEC is set to: /spec2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda3	xfs	734G	48G	687G	7%	/

From /sys/devices/virtual/dmi/id

BIOS: INSYDE Corp. 6.83 06/29/2019

Vendor: Huawei

Product: 1288H V5

Product Family: Purley

Serial: Serial Number

Additional information from dmidecode follows. WARNING: Use caution when you interpret

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei
(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

Test Date: Jan-2021

Test Sponsor: China Academy of Information and Communications Technology

Hardware Availability: Jul-2020

Tested by: China Academy of Information and Communications Technology

Software Availability: Apr-2020

Platform Notes (Continued)

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.

Memory:

24x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933

(End of data from sysinfo program)

Compiler Version Notes

```
=====  
C      | 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base)  
      | 625.x264_s(base) 657.xz_s(base)  
-----
```

```
Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1  
NextGen Build 20200304  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----
```

```
=====  
C++   | 620.omnetpp_s(base) 623.xalanbmk_s(base) 631.deepsjeng_s(base)  
     | 641.leela_s(base)  
-----
```

```
Intel(R) C++ Compiler for applications running on Intel(R) 64, Version 2021.1  
NextGen Build 20200304  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----
```

```
=====  
Fortran | 648.exchange2_s(base)  
-----
```

```
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.1.1.217 Build 20200306  
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.  
-----
```

Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei

(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

Test Sponsor: China Academy of Information and Communications Technology

Tested by: China Academy of Information and Communications Technology

Test Date: Jan-2021

Hardware Availability: Jul-2020

Software Availability: Apr-2020

Base Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Base Portability Flags

```
600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64
```

Base Optimization Flags

C benchmarks:

```
-m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
-xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse -funroll-loops
-fuse-ld=gold -qopt-mem-layout-trans=4 -fopenmp -DSPEC_OPENMP
-L/usr/local/jemalloc64-5.0.1/ -ljemalloc
```

C++ benchmarks:

```
-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto -mfpmath=sse
-funroll-loops -fuse-ld=gold -qopt-mem-layout-trans=4
-L/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Fortran benchmarks:

```
-m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -xCORE-AVX512
-O3 -ipo -no-prec-div -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-mbranches-within-32B-boundaries
```



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

Huawei

(Test Sponsor: China Academy of Information and Communications Technology)

SPECspeed®2017_int_base = 11.7

Huawei 1288H V5 (Intel Xeon Gold 6246R)

SPECspeed®2017_int_peak = Not Run

CPU2017 License: 6177

Test Sponsor: China Academy of Information and Communications Technology

Tested by: China Academy of Information and Communications Technology

Test Date: Jan-2021

Hardware Availability: Jul-2020

Software Availability: Apr-2020

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

http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revB.html

<http://www.spec.org/cpu2017/flags/CAICT-Platform-Settings-V1.3.html>

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revB.xml

<http://www.spec.org/cpu2017/flags/CAICT-Platform-Settings-V1.3.xml>

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.0 on 2021-02-18 21:50:34-0500.

Report generated on 2021-03-16 15:25:19 by CPU2017 PDF formatter v6255.

Originally published on 2021-03-16.