



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Huawei**

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

**Huawei 2488H V5 (Intel Xeon Gold 5218)**

**CPU2017 License:** 6177

**Test Sponsor:** China Academy of Information and Communications Technology

**Tested by:** China Academy of Information and Communications Technology

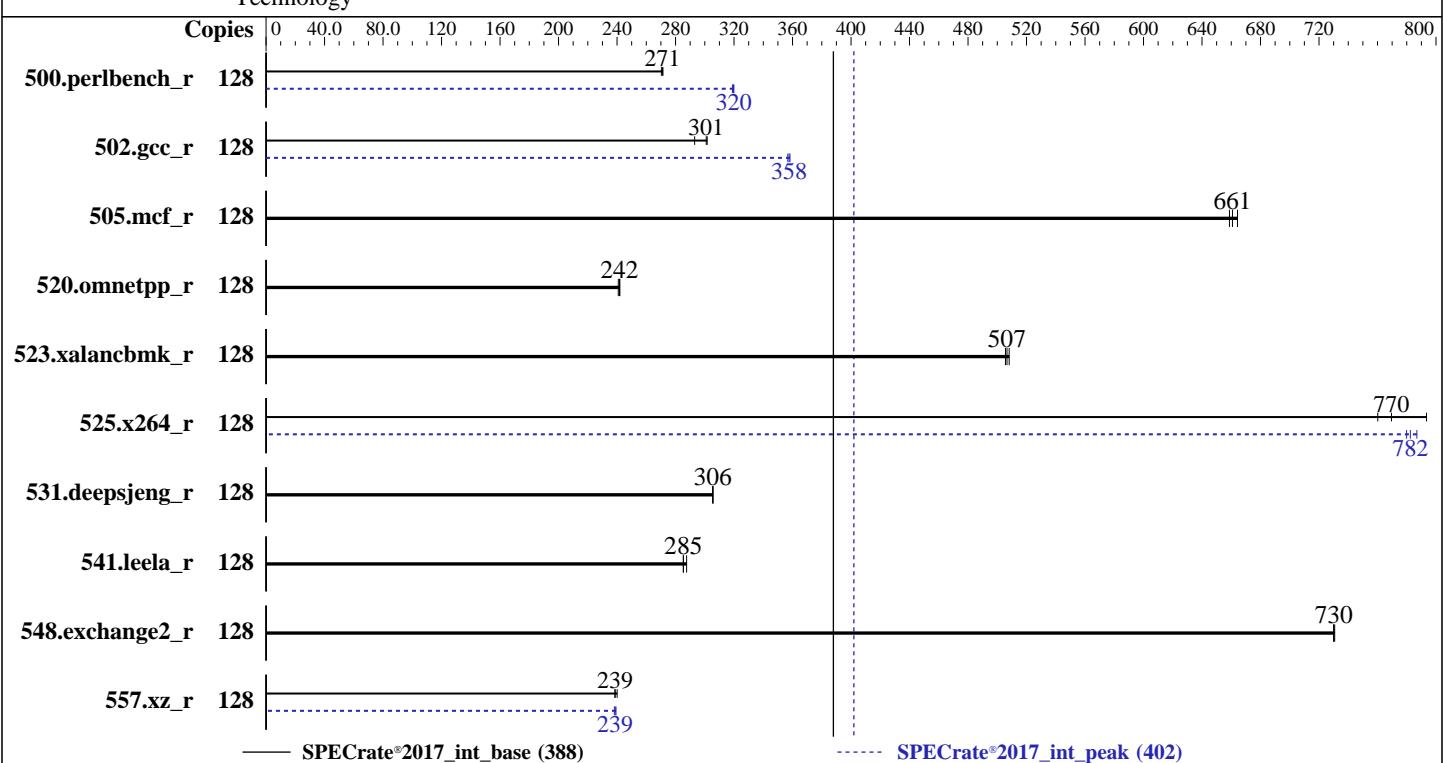
**SPECrate®2017\_int\_base = 388**

**SPECrate®2017\_int\_peak = 402**

**Test Date:** Jul-2020

**Hardware Availability:** Apr-2019

**Software Availability:** Apr-2020



— SPECrate®2017\_int\_base (388)

---- SPECrate®2017\_int\_peak (402)

## Hardware

CPU Name: Intel Xeon Gold 5218  
 Max MHz: 3900  
 Nominal: 2300  
 Enabled: 64 cores, 4 chips, 2 threads/core  
 Orderable: 2,4 chips  
 Cache L1: 32 KB I + 32 KB D on chip per core  
 L2: 1 MB I+D on chip per core  
 L3: 22 MB I+D on chip per chip  
 Other: None  
 Memory: 736 GB (46 x 16 GB 2Rx4 PC4-2933Y-R, running at 2666)  
 Storage: 1 x 1200 GB SAS SSD  
 Other: None

OS:  
 Compiler:

Parallel:  
 Firmware:  
 File System:  
 System State:  
 Base Pointers:  
 Peak Pointers:  
 Other:  
 Power Management:

SUSE Linux Enterprise Server 12 SP4 (x86\_64)  
 Kernel 4.12.14-94.41-default  
 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  
 No  
 Version 6.83 released Jun-2019  
 xfs  
 Run level 3 (multi-user)  
 64-bit  
 32/64-bit  
 jemalloc memory allocator V5.0.1  
 BIOS set to prefer performance at the cost of additional power usage.



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	128	751	271	<b>752</b>	<b>271</b>	754	270	128	637	320	639	319	<b>637</b>	<b>320</b>
502.gcc_r	128	601	302	618	293	<b>602</b>	<b>301</b>	128	508	357	<b>507</b>	<b>358</b>	506	358
505.mcf_r	128	311	664	314	659	<b>313</b>	<b>661</b>	128	311	664	314	659	<b>313</b>	<b>661</b>
520.omnetpp_r	128	694	242	<b>695</b>	<b>242</b>	697	241	128	694	242	<b>695</b>	<b>242</b>	697	241
523.xalancbmk_r	128	<b>267</b>	<b>507</b>	266	508	267	506	128	<b>267</b>	<b>507</b>	266	508	267	506
525.x264_r	128	282	794	295	760	<b>291</b>	<b>770</b>	128	287	780	<b>286</b>	<b>782</b>	285	787
531.deepsjeng_r	128	480	306	<b>480</b>	<b>306</b>	480	305	128	480	306	<b>480</b>	<b>306</b>	480	305
541.leela_r	128	737	288	<b>743</b>	<b>285</b>	743	285	128	737	288	<b>743</b>	<b>285</b>	743	285
548.exchange2_r	128	<b>459</b>	<b>730</b>	459	731	459	730	128	<b>459</b>	<b>730</b>	459	731	459	730
557.xz_r	128	576	240	<b>579</b>	<b>239</b>	580	239	128	580	238	<b>579</b>	<b>239</b>	578	239
<b>SPECrate®2017_int_base =</b>				<b>388</b>										
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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. SPEC has learned that this result, which used an evaluation compiler, was submitted contrary to the compiler license terms.

Intel has granted a one-time waiver for this result.

## 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"

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

```
LD_LIBRARY_PATH =
  "/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel6
  4:/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/ia32:"
```

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## Environment Variables Notes (Continued)

/usr/local/jemalloc32-5.0.1"

MALLOC\_CONF = "retain:true"

## 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

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) 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 Performance

SNC Set to Enabled

IMC Interleaving Set to 1-way Interleave

XPT Prefetch Set to Enabled

Sysinfo program /spec2017/bin/sysinfo

Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011

running on linux-zwm5 Thu Jul 16 17:55:31 2020

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 5218 CPU @ 2.30GHz

4 "physical id"s (chips)

128 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

(Continued on next page)



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## Platform Notes (Continued)

```
cpu cores : 16
siblings   : 32
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 2: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
physical 3: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
```

From lscpu:

```
Architecture:           x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                128
On-line CPU(s) list:  0-127
Thread(s) per core:   2
Core(s) per socket:   16
Socket(s):             4
NUMA node(s):          8
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 85
Model name:            Intel(R) Xeon(R) Gold 5218 CPU @ 2.30GHz
Stepping:               6
CPU MHz:               2300.000
CPU max MHz:           3900.0000
CPU min MHz:           1000.0000
BogoMIPS:              4600.00
Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              1024K
L3 cache:              22528K
NUMA node0 CPU(s):    0-3,8-11,64-67,72-75
NUMA node1 CPU(s):    4-7,12-15,68-71,76-79
NUMA node2 CPU(s):    16-19,24-27,80-83,88-91
NUMA node3 CPU(s):    20-23,28-31,84-87,92-95
NUMA node4 CPU(s):    32-35,40-43,96-99,104-107
NUMA node5 CPU(s):    36-39,44-47,100-103,108-111
NUMA node6 CPU(s):    48-51,56-59,112-115,120-123
NUMA node7 CPU(s):    52-55,60-63,116-119,124-127
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 xtTopology nonstop_tsc cpuid
aperfmpfperf 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
```

(Continued on next page)



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## Platform Notes (Continued)

```
mba ibrs ibpb stibp tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmil  
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 : 22528 KB
```

```
From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a  
physical chip.
```

```
available: 8 nodes (0-7)  
node 0 cpus: 0 1 2 3 8 9 10 11 64 65 66 67 72 73 74 75  
node 0 size: 95177 MB  
node 0 free: 94880 MB  
node 1 cpus: 4 5 6 7 12 13 14 15 68 69 70 71 76 77 78 79  
node 1 size: 96764 MB  
node 1 free: 96546 MB  
node 2 cpus: 16 17 18 19 24 25 26 27 80 81 82 83 88 89 90 91  
node 2 size: 64508 MB  
node 2 free: 63971 MB  
node 3 cpus: 20 21 22 23 28 29 30 31 84 85 86 87 92 93 94 95  
node 3 size: 96764 MB  
node 3 free: 96586 MB  
node 4 cpus: 32 33 34 35 40 41 42 43 96 97 98 99 104 105 106 107  
node 4 size: 96764 MB  
node 4 free: 96589 MB  
node 5 cpus: 36 37 38 39 44 45 46 47 100 101 102 103 108 109 110 111  
node 5 size: 96764 MB  
node 5 free: 96593 MB  
node 6 cpus: 48 49 50 51 56 57 58 59 112 113 114 115 120 121 122 123  
node 6 size: 96764 MB  
node 6 free: 96562 MB  
node 7 cpus: 52 53 54 55 60 61 62 63 116 117 118 119 124 125 126 127  
node 7 size: 96556 MB  
node 7 free: 96362 MB  
node distances:  
node 0 1 2 3 4 5 6 7  
0: 10 11 21 21 31 31 21 21  
1: 11 10 21 21 31 31 21 21  
2: 21 21 10 11 21 21 31 31  
3: 21 21 11 10 21 21 31 31  
4: 31 31 21 21 10 11 21 21  
5: 31 31 21 21 11 10 21 21  
6: 21 21 31 31 21 21 10 11
```

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## Platform Notes (Continued)

7: 21 21 31 31 21 21 11 10

```
From /proc/meminfo
  MemTotal:       757829024 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
  # 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-zwm5 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 Jul 16 17:50

```
SPEC is set to: /spec2017
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/sda3        xfs   869G  138G  731G  16%  /
```

From /sys/devices/virtual/dmi/id

(Continued on next page)



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## Platform Notes (Continued)

BIOS: INSYDE Corp. 6.83 06/29/2019

Vendor: Huawei

Product: 2488H V5

Product Family: Purley

Serial: Huawei

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.

Memory:

2x NO DIMM NO DIMM

46x Samsung M393A2K43CB2-CVF 16 GB 2 rank 2933, configured at 2666

(End of data from sysinfo program)

## Compiler Version Notes

```
=====
C      | 502.gcc_r(peak)
-----
Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen
Build 20200304
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-----

=====
C      | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
| 525.x264_r(base, peak) 557.xz_r(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      | 557.xz_r(peak)
-----
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.
icc (NextGen): command line warning #10430: Unsupported command line options
encountered
These options as listed are not supported with the compiler selected.
```

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## Compiler Version Notes (Continued)

For more information, use '-qnextgen-diag'.

option list:

-no-prec-div

=====

C | 500.perlbench\_r(peak)

=====

Intel(R) C 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.

icc: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

=====

C | 502.gcc\_r(peak)

=====

Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen  
Build 20200304

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====

C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(base)

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Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1  
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=====

C | 502.gcc\_r(peak)

=====

Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen  
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Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====

C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(base)

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option list:

-no-prec-div

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C | 500.perlbench\_r(peak)

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Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
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icc: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

=====

C | 502.gcc\_r(peak)

=====

Intel(R) C Compiler for applications running on IA-32, Version 2021.1 NextGen Build 20200304

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

=====

C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(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 | 557.xz\_r(peak)

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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.

icc (NextGen): command line warning #10430: Unsupported command line options encountered

These options as listed are not supported with the compiler selected.

For more information, use '-qnextgen-diag'.

option list:  
-no-prec-div

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C | 500.perlbench\_r(peak)

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## Compiler Version Notes (Continued)

C++ | 520.omnetpp\_r(base, peak) 523.xalancbmk\_r(base, peak)  
| 531.deepsjeng\_r(base, peak) 541.leela\_r(base, peak)

-----  
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 | 548.exchange2\_r(base, peak)

-----  
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.

ifort: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

## 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



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

**Huawei**

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

**Huawei 2488H V5 (Intel Xeon Gold 5218)**

**SPECrate®2017\_int\_base = 388**

**SPECrate®2017\_int\_peak = 402**

**CPU2017 License:** 6177

**Test Sponsor:** China Academy of Information and Communications Technology

**Tested by:** China Academy of Information and Communications Technology

**Test Date:** Jul-2020

**Hardware Availability:** Apr-2019

**Software Availability:** Apr-2020

## 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 -festo -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
```

C++ benchmarks:

```
-m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries  
-Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -festo -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 -Wl,-z,muldefs  
-xCORE-AVX512 -O3 -ipo -no-prec-div -qopt-mem-layout-trans=4  
-nostandard-realloc-lhs -align array32byte -auto  
-mbranches-within-32B-boundaries  
-L/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64_lin  
-lqkmalloc
```

## Peak Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

## Peak Portability Flags

500.perlbench\_r: -DSPEC\_LP64 -DSPEC\_LINUX\_X64  
502.gcc\_r: -D\_FILE\_OFFSET\_BITS=64  
505.mcf\_r: -DSPEC\_LP64

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## Peak Portability Flags (Continued)

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

## Peak Optimization Flags

C benchmarks:

500.perlbench\_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2)  
-xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4 -fno-strict-overflow  
-mbranches-within-32B-boundaries  
-L/opt/intel/compilers\_and\_libraries\_2020.1.217/linux/compiler/lib/intel64\_lin  
-lqkmalloc

502.gcc\_r: -m32  
-L/opt/intel/compilers\_and\_libraries\_2020.1.217/linux/compiler/lib/ia32\_lin  
-std=gnu89  
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries  
-Wl,-z,muldefs -fprofile-generate(pass 1)  
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512 -flto  
-Ofast(pass 1) -O3 -ffast-math -qnextgen -fuse-ld=gold  
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc32-5.0.1/  
-ljemalloc

505.mcf\_r: basepeak = yes

525.x264\_r: -m64 -qnextgen -std=c11  
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries  
-Wl,-z,muldefs -xCORE-AVX512 -flto -O3 -ffast-math  
-fuse-ld=gold -qopt-mem-layout-trans=4 -fno-alias  
-L/opt/intel/compilers\_and\_libraries\_2020.1.217/linux/compiler/lib/intel64\_lin  
-lqkmalloc

557.xz\_r: -m64 -qnextgen -std=c11  
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries  
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4

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## Peak Optimization Flags (Continued)

557.xz\_r (continued):

-L/opt/intel/compilers\_and\_libraries\_2020.1.217/linux/compiler/lib/intel64\_lin  
-lqkmalloc

C++ benchmarks:

520.omnetpp\_r: basepeak = yes

523.xalancbmk\_r: basepeak = yes

531.deepsjeng\_r: basepeak = yes

541.leela\_r: basepeak = yes

Fortran benchmarks:

548.exchange2\_r: basepeak = yes

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

[http://www.spec.org/cpu2017/flags/Intel-ic19.lul-official-linux64\\_revB.html](http://www.spec.org/cpu2017/flags/Intel-ic19.lul-official-linux64_revB.html)  
<http://www.spec.org/cpu2017/flags/CAICT-Platform-Settings-V1.0.2020-08-21.html>

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

[http://www.spec.org/cpu2017/flags/Intel-ic19.lul-official-linux64\\_revB.xml](http://www.spec.org/cpu2017/flags/Intel-ic19.lul-official-linux64_revB.xml)  
<http://www.spec.org/cpu2017/flags/CAICT-Platform-Settings-V1.0.2020-08-21.xml>

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