## SPEC® CPU2017 Integer Speed Result

### Huawei

**Huawei CH121 V5 (Intel Xeon Platinum 8260M)**

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
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<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>Not Run</td>
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**CPU2017 License:** 3175  
**Test Date:** Apr-2019  
**Test Sponsor:** Huawei  
**Tested by:** Huawei  
**Hardware Availability:** Apr-2019  
**Software Availability:** Dec-2018

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**SPECspeed2017_int_base (10.2)**

### Hardware

- **CPU Name:** Intel Xeon Platinum 8260M  
- **Max MHz.:** 3900  
- **Nominal:** 2400  
- **Enabled:** 48 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:** 384 GB (24 x 16 GB 2Rx8 PC4-2933Y-R)  
- **Storage:** 1 x 1200 GB SAS, 10000 RPM  
- **Other:** None

### Software

- **OS:** SUSE Linux Enterprise Server 12 SP4 (x86_64)  
- **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:** Yes  
- **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:** jemalloc memory allocator V5.0.1
# SPEC CPU2017 Integer Speed Result

## Huawei

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**SPECspeed2017_int_base = 10.2**

**SPECspeed2017_int_peak = Not Run**

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### Results Table

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</tbody>
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**SPECspeed2017_int_base = 10.2**

**SPECspeed2017_int_peak = Not Run**

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

### 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:

- `KMP_AFFINITY = "granularity=fine,compact,1,0"
- `OMP_STACKSIZE = "192M"

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
```

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) is mitigated in the system as tested and documented.

### SPEC CPU2017 Integer Speed Result

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

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### Platform Notes

BIOS configuration:
- Power Policy Set to Load Balance
- Hyper-Threadng Set to Disable
- XPT Prefetch Set to Enabled

Sysinfo program /spec2017/bin/sysinfo  
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9  
running on sles12sp4 Thu Apr 11 21:44:18 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) Platinum 8260M CPU @ 2.40GHz
  2 "physical id"s (chips)
  48 "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 : 24
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 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
```

From lscpu:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                48
On-line CPU(s) list:   0-47
Thread(s) per core:    1
Core(s) per socket:    24
Socket(s):             2
NUMA node(s):          2
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 85
Model name:            Intel(R) Xeon(R) Platinum 8260M CPU @ 2.40GHz
Stepping:              6
CPU MHz:               2400.000
CPU max MHz:           3900.0000
CPU min MHz:           1000.0000
BogoMIPS:              4800.00
Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              1024K
L3 cache:              36608K
```

(Continued on next page)
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### Platform Notes (Continued)

- NUMA node0 CPU(s): 0-23
- NUMA node1 CPU(s): 24-47
- 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 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movntdqa popcnt tsc_deadline_timer aes xsave f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_13 invpcid_single ssbd mba ibpb stibp tpr_shadow vnmi flexpriority ept vpid fsgsbased 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 xsaves xsaveopt xgetbv1 xsavec cqm_llc cqm_occup_llc cqm_mmwin_total cqm_mmwin_local dtherm ida arat pln pts pku ospke avx512_vnni flush_lld arch_capabilities

```
/cproc/cpoinfo 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 16  17 18  19 20  21 22 23
node 0 size: 191932 MB
node 0 free: 189987 MB
node 1 cpus: 24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47
node 1 size: 193249 MB
node 1 free: 191960 MB
node distances:
   node  0  1
   0:  10  21
   1:  21  10
```

From /proc/meminfo
```
MemTotal: 394426256 kB
HugePages_Total: 0
Hugepagesize: 2048 KB
```

From /etc/*release* /etc/*version*
```
SUSE-release:
   NAME="SLES"
   VERSION="12-SP4"
   VERSION_ID="12.4"
```

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Platform Notes (Continued)

PRETTY_NAME="SUSE Linux Enterprise Server 12 SP4"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp4"

uname -a:
   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 11 06:53

SPEC is set to: /spec2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 700G 15G 686G 3% /

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

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
CC  600.perlbench_s(base)  602.gcc_s(base)  605.mcf_s(base)  625.x264_s(base)
   657.xz_s(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.

==============================================================================
CXXC 620.omnetpp_s(base)  623.xalancbmk_s(base)  631.deepsjeng_s(base)
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**Compiler Version Notes (Continued)**

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.

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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.

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**Base Compiler Invocation**

C benchmarks:  
```bash
icc -m64 -std=c11
```

C++ benchmarks:  
```bash
icpc -m64
```

Fortran benchmarks:  
```bash
ifort -m64
```

**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`
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### Base Optimization Flags

**C benchmarks:**
- `-Wl,-z,muldefs`  
- `-xCORE-AVX512`  
- `-ipo -O3 -no-prec-div`  
- `-qopt-mem-layout-trans=4`  
- `-qopenmp -DSPEC_OPENMP`  
- `-L/usr/local/je5.0.1-64/lib -ljemalloc`

**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:**
- `-xCORE-AVX512`  
- `-ipo -O3 -no-prec-div`  
- `-qopt-mem-layout-trans=4`  
- `-nostandard-realloc-lhs`

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 2019-04-11 21:44:18-0400.  