# SPEC® CPU2017 Integer Speed Result

## Huawei

### Huawei G530 V5 (Intel Xeon Gold 6152)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>9.58</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>Not Run</td>
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</table>

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>3175</th>
</tr>
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<tbody>
<tr>
<td>Test Date:</td>
<td>Apr-2019</td>
</tr>
<tr>
<td>Test Sponsor:</td>
<td>Huawei</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Huawei</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Jul-2017</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Nov-2018</td>
</tr>
</tbody>
</table>

### Threads

<table>
<thead>
<tr>
<th>Test</th>
<th>SPECspeed2017_int_base (9.58)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>6.4</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>9.24</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>12.0</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>7.91</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>11.9</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>13.8</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>5.23</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>4.53</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>13.3</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>22.4</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Gold 6152
- **Max MHZ.:** 3700
- **Nominal:** 2100
- **Enabled:** 44 cores, 2 chips
- **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:** 30.25 MB I+D on chip per chip
- **Other:** None
- **Memory:** 384 GB (12 x 32 GB 2Rx4 PC4-2666V-R)
- **Storage:** 1 x 1920 GB SATA SSD
- **Other:** None

### Software

- **OS:** Red Hat Enterprise Linux Server release 7.6 (x86_64) (Maipo) 3.10.0-957.el7.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 1.09 Released Jan-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
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### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>44</td>
<td>278</td>
<td>6.39</td>
<td>275</td>
<td>6.45</td>
<td>277</td>
<td>6.41</td>
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<tr>
<td>602.gcc_s</td>
<td>44</td>
<td>431</td>
<td>9.24</td>
<td>446</td>
<td>8.94</td>
<td>431</td>
<td>9.24</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>44</td>
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<td>12.0</td>
<td>394</td>
<td>12.0</td>
<td>394</td>
<td>12.0</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>44</td>
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<td>7.98</td>
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<td>623.xalancbmk_s</td>
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<td>11.9</td>
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<td>11.9</td>
<td>120</td>
<td>11.9</td>
</tr>
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<td>625.x264_s</td>
<td>44</td>
<td>128</td>
<td>13.8</td>
<td>128</td>
<td>13.8</td>
<td>128</td>
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<td>44</td>
<td>274</td>
<td>5.23</td>
<td>274</td>
<td>5.23</td>
<td>274</td>
<td>5.23</td>
</tr>
<tr>
<td>641.leela_s</td>
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<td>4.53</td>
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<td>4.53</td>
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<tr>
<td>648.exchange2_s</td>
<td>44</td>
<td>221</td>
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<td>13.2</td>
<td>221</td>
<td>13.3</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>44</td>
<td>276</td>
<td>22.4</td>
<td>274</td>
<td>22.6</td>
<td>276</td>
<td>22.4</td>
</tr>
</tbody>
</table>

**SPECspeed2017_int_base = 9.58**  
**SPECspeed2017_int_peak = Not Run**

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

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

BIOS configuration:
Power Policy Set to Load Balance
Hyper-Threading Set to Disable
XPT Prefetch Set to Enabled
Sysinfo program /spec2017/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on localhost.localdomain Thu Apr 11 10:30:17 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 6152 CPU @ 2.10GHz
  2  "physical id"s (chips)
  44 "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 : 22
siblings : 22
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 16 17 18 19 20 21 24 25 26 27 28
```

From lscpu:

```
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 44
On-line CPU(s) list: 0-43
Thread(s) per core: 1
Core(s) per socket: 22
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6152 CPU @ 2.10GHz
Stepping: 4
CPU MHz: 2101.000
CPU max MHz: 2101.0000
CPU min MHz: 1000.0000
BogoMIPS: 4200.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 30976K
```
Huawei

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SPECspeed2017_int_peak = Not Run

CPU2017 License: 3175
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Hardware Availability: Jul-2017
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Software Availability: Nov-2018
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Platform Notes (Continued)

NUMA node0 CPU(s): 0-21
NUMA node1 CPU(s): 22-43
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
aperf perf eagerfpu pni pclmulqdq dtes64 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
xptr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
avx f16c rdrand lahf_lm abm 3dnowprefetch eb 3p cat_l3 intel_p6intel_pt ssbd
mva ibrs ibpb stibp tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1
hle avx2 smep bmi2 ersed ivpcid rt m cxmp rdt_a avx512f avx512dq rdseed adx smap
clflushopt clwb avx512cd avx512bw avx512vl xsaveopt xsavec xgetbv1 cmq _llc
ckq_occup_llc ckq_mbb_total ckq mb_local dtherm ida arat pln pts pk u ospke
spec_ctrl intel_stibp flush_l1d

/cache data

cache size: 30976 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
node 0 size: 195187 MB
node 0 free: 190303 MB
node 1 cpus: 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
node 1 size: 196608 MB
node 1 free: 191800 MB
node distances:
node 0 1
0: 10 21
1: 21 10

From /proc/meminfo

MemTotal: 394621960 KB
HugePages_Total: 0
Hugepagesize: 2048 KB

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

os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.6 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VARIANT="Server"
VARIANT_ID="server"
VERSION_ID="7.6"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.6 (Maipo)"
redhat-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)
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**Platform Notes (Continued)**

```
system-release: Red Hat Enterprise Linux Server release 7.6 (Maipo)  
```

```
uname -a:  
Linux localhost.localdomain 3.10.0-957.el7.x86_64 #1 SMP Thu Oct 4 20:48:51 UTC 2018  
x86_64 x86_64 x86_64 GNU/Linux
```

**Kernel self-reported vulnerability status:**

- CVE-2017-5754 (Meltdown): Mitigation: PTI  
- CVE-2017-5753 (Spectre variant 1): Mitigation: Load fences, __user pointer sanitization  
- CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS (kernel)

**run-level 3 Apr 11 10:27**

**SPEC is set to:** /spec2017

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/sda4</td>
<td>xfs</td>
<td>300G</td>
<td>8.1G</td>
<td>292G</td>
<td>3%</td>
<td>/</td>
</tr>
</tbody>
</table>

**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. 1.09 01/31/2019  
- Memory:  
  - 12x NO DIMM NO DIMM  
  - 12x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666

(End of data from sysinfo program)

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**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)  
641.leela_s(base)  
==============================================================================
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
```

(Continued on next page)
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Compiler Version Notes (Continued)

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

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:
-W1, -z, muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP

(Continued on next page)
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SPECspeed2017_int_base = 9.58

Base Optimization Flags (Continued)

C benchmarks (continued):
-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:
http://www.spec.org/cpu2017/flags/Huawei-Platform-Settings-SKL-V1.9-revC.xml

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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 10:30:16-0400.