## SPEC® CPU2017 Integer Speed Result

### Huawei

#### Huawei 1288H V5 (Intel Xeon Platinum 8153)

**SPECspeed2017_int_base** = 7.05

**SPECspeed2017_int_peak** = 7.27

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed2017_int_base</th>
<th>SPECspeed2017_int_peak</th>
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<tr>
<td>600.perlbench_s 64</td>
<td>4.77</td>
<td>7.27</td>
</tr>
<tr>
<td>602.gcc_s 64</td>
<td>5.74</td>
<td>7.82</td>
</tr>
<tr>
<td>605.mcf_s 64</td>
<td>7.45</td>
<td>9.41</td>
</tr>
<tr>
<td>620.omnetpp_s 64</td>
<td>5.34</td>
<td>7.59</td>
</tr>
<tr>
<td>623.xalancbmk_s 64</td>
<td>7.45</td>
<td>9.41</td>
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<tr>
<td>625.x264_s 64</td>
<td>4.10</td>
<td>7.88</td>
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<td>631.deepsjeng_s 64</td>
<td>4.10</td>
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<tr>
<td>641.leela_s 64</td>
<td>3.26</td>
<td>8.77</td>
</tr>
<tr>
<td>648.exchange2_s 64</td>
<td>3.26</td>
<td>10.1</td>
</tr>
<tr>
<td>657.xz_s 64</td>
<td>3.26</td>
<td>18.6</td>
</tr>
</tbody>
</table>

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### Hardware

- **CPU Name:** Intel Xeon Platinum 8153
- **Max MHz.:** 2800
- **Nominal:** 2000
- **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:** 22 MB I+D on chip per chip
- **Other:** None
- **Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
- **Storage:** 1 x 1200 GB SAS, 10000 RPM
- **Other:** None

### Software

- **OS:** Red Hat Enterprise Linux Server release 7.3 (Maipo)
- **Compiler:** C/C++: Version 18.0.0.128 of Intel C/C++
- **Firmware:** Version 0.31 Released Sep-2017
- **File System:** ext4
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 32/64-bit
- **Other:** jemalloc: jemalloc memory allocator library V5.0.1
Huawei

Huawei 1288H V5 (Intel Xeon Platinum 8153)

---

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
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<th>Seconds</th>
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**SPECspeed2017_int_base = 7.05**

**SPECspeed2017_int_peak = 7.27**

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### Operating System Notes

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

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### General Notes

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

- **KMP_AFFINITY** = "granularity=fine,scatter"
- **LD_LIBRARY_PATH** = "/spec2017/lib/ia32/:/spec2017/lib/intel64/:/spec2017/je5.0.1-32/:/spec2017/je5.0.1-64"
- **OMP_STACKSIZE** = "192M"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM memory using Redhat Enterprise Linux 7.4

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
```

jemalloc: configured and built at default for

- 32bit (i686) and 64bit (x86_64) targets;
- jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5;

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

No: 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.

(Continued on next page)
Huawei 1288H V5 (Intel Xeon Platinum 8153)  

**General Notes (Continued)**

No: 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.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, [http://www.spec.org/osg/policy.html](http://www.spec.org/osg/policy.html)

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

**Platform Notes**

BIOS configuration:
Power Efficiency Mode Set to Custom  
Hyper-Threading Set to Disable  
Sysinfo program /spec2017/bin/sysinfo  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f  
running on localhost.localdomain Mon Jan 15 03:14:26 2018

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 8153 CPU @ 2.00GHz  
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 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

From lscpu:  
Architecture: x86_64  
CPU op-mode(s): 32-bit, 64-bit  
Byte Order: Little Endian  
CPU(s): 32

(Continued on next page)
Huawei

Huawei 1288H V5 (Intel Xeon Platinum 8153)

| SPECspeed2017_int_base = 7.05 |
| SPECspeed2017_int_peak = 7.27 |

| CPU2017 License: 3175  | Test Date: Jan-2018 |
| Test Sponsor: Huawei   | Hardware Availability: Jul-2017 |
| Tested by: Huawei      | Software Availability: Sep-2017 |

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### Platform Notes (Continued)

- 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
- CPU family: 6
- Model: 85
- Model name: Intel(R) Xeon(R) Platinum 8153 CPU @ 2.00GHz
- Stepping: 4
- CPU MHz: 2001.000
- BogoMIPS: 4005.80
- Virtualization: VT-x
- L1d cache: 32K
- L1i cache: 32K
- L2 cache: 1024K
- L3 cache: 22528K
- NUMA node0 CPU(s): 0-15
- NUMA node1 CPU(s): 16-31

/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: 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: 194709 MB
node 0 free: 188288 MB
node 1 cpus: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
node 1 size: 196608 MB
node 1 free: 191387 MB
node distances:
node 0 1
0: 10 21
1: 21 10

From /proc/meminfo
MemTotal: 394144876 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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

os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"

(Continued on next page)
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Platform Notes (Continued)

ID_LIKE="fedora"
VERSION_ID="7.3"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)

uname -a:
Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13 EDT 2016
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 14 18:25

SPEC is set to: /spec2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 689G 25G 629G 4% /

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. 0.31 09/29/2017
Memory: 24x Samsung M393A2K43BB1-CTD 16 GB 2 rank 2666

(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,
peak) 657.xz_s(base)
==============================================================================
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
==============================================================================

==============================================================================
CC  600.perlbench_s(peak) 602.gcc_s(peak) 605.mcf_s(peak) 657.xz_s(peak)
==============================================================================
icc (ICC) 18.0.0 20170811
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==============================================================================

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**Compiler Version Notes (Continued)**

```
CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
641.leela_s(base)
```

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

```
CXXC 620.omnetpp_s(peak) 623.xalancbmk_s(peak) 631.deepsjeng_s(peak)
641.leela_s(peak)
```

icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

```
FC 648.exchange2_s(base, peak)
```

ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

---

**Base Compiler Invocation**

C benchmarks:
icc

C++ benchmarks:
icpc

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

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**SPEC CPU2017 Integer Speed Result**

**Huawei**

**Huawei 1288H V5 (Intel Xeon Platinum 8153)**

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

**Test Date:** Jan-2018  
**Hardware Availability:** Jul-2017  
**Software Availability:** Sep-2017

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**Base Portability Flags (Continued)**

- 641.leela_s: -DSPEC_LP64  
- 648.exchange2_s: -DSPEC_LP64  
- 657.xz_s: -DSPEC_LP64

---

**Base Optimization Flags**

**C benchmarks:**
- -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
- -qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP  
- -L/usr/local/je5.0.1-64/lib -ljemalloc

**C++ benchmarks:**
- -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
- -qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

**Fortran benchmarks:**
- -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
- -qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte  
- -L/usr/local/je5.0.1-64/lib -ljemalloc

---

**Base Other Flags**

**C benchmarks:**
- -m64 -std=c11

**C++ benchmarks:**
- -m64

**Fortran benchmarks:**
- -m64

---

**Peak Compiler Invocation**

**C benchmarks:**
- icc

**C++ benchmarks:**
- icpc

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Huawei

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Peak Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Peak 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: -D_FILE_OFFSET_BITS=64 -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

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX2 -qopt-mem-layout-trans=3 -ipo -O3
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/je5.0.1-64/lib -ljemalloc

602.gcc_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2
-xCORE-AVX2 -qopt-mem-layout-trans=3 -ipo -O3
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

605.mcf_s: basepeak = yes
625.x264_s: basepeak = yes
657.xz_s: Same as 602.gcc_s

C++ benchmarks:

620.omnetpp_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP

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Huawei

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SPEC CPU2017 Integer Speed Result

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Peak Optimization Flags (Continued)

620.omnetpp_s (continued):
-\L/usr/local/je5.0.1-64/lib -ljemalloc

623.xalancbmk_s: -\L/opt/intel/compilers_and_libraries_2018/linux/lib/ia32
-W1, -z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=3
-DSPEC_SUPPRESS_OPENMP -qopenmp -DSPEC_OPENMP
-\L/usr/local/je5.0.1-32/lib -ljemalloc

631.deepsjeng_s: basepeak = yes

641.leela_s: Same as 620.omnetpp_s

Fortran benchmarks:
-W1, -z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
-\L/usr/local/je5.0.1-64/lib -ljemalloc

Peak Other Flags

C benchmarks:
-m64 -std=c11

C++ benchmarks (except as noted below):
-m64

623.xalancbmk_s: -m32

Fortran benchmarks:
-m64

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.html
http://www.spec.org/cpu2017/flags/Huawei-Platform-Settings-SKL-V1.7.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.xml
http://www.spec.org/cpu2017/flags/Huawei-Platform-Settings-SKL-V1.7.xml
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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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