## SPEC® CPU2017 Floating Point Rate Result

**Huawei**  
Huawei CH225 V5 (Intel Xeon Platinum 8158)

**SPECrate2017_fp_base = 170**  
**SPECrate2017_fp_peak = 174**

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

### Hardware

<table>
<thead>
<tr>
<th>CPU Name:</th>
<th>Intel Xeon Platinum 8158</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max MHz.:</td>
<td>3700</td>
</tr>
<tr>
<td>Nominal:</td>
<td>3000</td>
</tr>
<tr>
<td>Enabled:</td>
<td>24 cores, 2 chips, 2 threads/core</td>
</tr>
<tr>
<td>Orderable:</td>
<td>1.2 chips</td>
</tr>
<tr>
<td>Cache L1:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>L2:</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3:</td>
<td>24.75 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)</td>
</tr>
<tr>
<td>Storage:</td>
<td>1 x 1200 GB SAS, 10000 RPM</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>OS:</th>
<th>Red Hat Enterprise Linux Server release 7.3 (Maipo)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.10.0-693.11.6.el7.x86_64</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 18.0.2.199 of Intel C/C++ Compiler for Linux;</td>
</tr>
<tr>
<td>Fortran:</td>
<td>Version 18.0.2.199 of Intel Fortran Compiler for Linux</td>
</tr>
<tr>
<td>Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>Firmware:</td>
<td>Version 0.80 Released Jun-2018</td>
</tr>
<tr>
<td>File System:</td>
<td>xfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
</tbody>
</table>

---

**Copies**

<table>
<thead>
<tr>
<th>Specrate2017_fp_base</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specrate2017_fp_peak</td>
<td>174</td>
</tr>
</tbody>
</table>

---

**Test Sponsor:** Huawei  
**Hardware Availability:** Jul-2017  
**Software Availability:** Mar-2018
Huawei CH225 V5 (Intel Xeon Platinum 8158)

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>48</td>
<td>1010</td>
<td>477</td>
<td>1010</td>
<td>48</td>
<td>1009</td>
<td>477</td>
<td>1010</td>
<td>48</td>
<td>1009</td>
<td>477</td>
<td>1010</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>48</td>
<td>463</td>
<td>131</td>
<td>463</td>
<td>48</td>
<td>463</td>
<td>131</td>
<td>463</td>
<td>48</td>
<td>463</td>
<td>131</td>
<td>463</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>48</td>
<td>411</td>
<td>111</td>
<td>411</td>
<td>48</td>
<td>412</td>
<td>111</td>
<td>411</td>
<td>48</td>
<td>412</td>
<td>111</td>
<td>411</td>
</tr>
<tr>
<td>510.pcrest_r</td>
<td>48</td>
<td>1115</td>
<td>113</td>
<td>1116</td>
<td>48</td>
<td>1105</td>
<td>114</td>
<td>1113</td>
<td>48</td>
<td>1113</td>
<td>113</td>
<td>1117</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>48</td>
<td>637</td>
<td>176</td>
<td>635</td>
<td>48</td>
<td>637</td>
<td>176</td>
<td>637</td>
<td>48</td>
<td>637</td>
<td>176</td>
<td>637</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>48</td>
<td>523</td>
<td>96.8</td>
<td>524</td>
<td>48</td>
<td>522</td>
<td>96.8</td>
<td>523</td>
<td>48</td>
<td>522</td>
<td>96.8</td>
<td>523</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>48</td>
<td>566</td>
<td>190</td>
<td>556</td>
<td>48</td>
<td>566</td>
<td>190</td>
<td>566</td>
<td>48</td>
<td>566</td>
<td>190</td>
<td>566</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>48</td>
<td>436</td>
<td>168</td>
<td>436</td>
<td>48</td>
<td>436</td>
<td>168</td>
<td>435</td>
<td>48</td>
<td>435</td>
<td>168</td>
<td>435</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>48</td>
<td>440</td>
<td>179</td>
<td>473</td>
<td>48</td>
<td>470</td>
<td>179</td>
<td>470</td>
<td>48</td>
<td>458</td>
<td>183</td>
<td>459</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>48</td>
<td>310</td>
<td>385</td>
<td>311</td>
<td>48</td>
<td>310</td>
<td>385</td>
<td>311</td>
<td>48</td>
<td>310</td>
<td>385</td>
<td>310</td>
</tr>
<tr>
<td>544.fotonik3d_r</td>
<td>48</td>
<td>1279</td>
<td>146</td>
<td>1278</td>
<td>48</td>
<td>1278</td>
<td>146</td>
<td>1278</td>
<td>48</td>
<td>1279</td>
<td>146</td>
<td>1284</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>48</td>
<td>829</td>
<td>92.0</td>
<td>830</td>
<td>48</td>
<td>836</td>
<td>91.3</td>
<td>836</td>
<td>48</td>
<td>836</td>
<td>91.3</td>
<td>836</td>
</tr>
</tbody>
</table>

SPECrate2017_fp_base = 170
SPECrate2017_fp_peak = 174

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"

General Notes

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

Binaries compiled on a system with 1x Intel Core i7-6700K 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
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

(Continued on next page)
SPEC CPU2017 Floating Point Rate Result

Huawei

Huawei CH225 V5 (Intel Xeon Platinum 8158)

SPECrate2017_fp_base = 170
SPECrate2017_fp_peak = 174

CPU2017 License: 3175
Test Sponsor: Huawei
Test Date: Oct-2018
Hardware Availability: Jul-2017
Tested by: Huawei
Software Availability: Mar-2018

General Notes (Continued)

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.

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: r5797 of 2017-06-14 96c45e4568ad54c135fd618bccc091c0f
running on localhost.localdomain Wed Oct 10 14:46:20 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 8158 CPU @ 3.00GHz
  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 : 12
siblings : 24
physical 0: cores 0 1 2 3 4 9 10 16 18 19 25 26
physical 1: cores 0 3 4 5 6 7 16 18 19 20 21 22

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: 2
Core(s) per socket: 12
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Platinum 8158 CPU @ 3.00GHz
Stepping: 4

(Continued on next page)
Huawei CH225 V5 (Intel Xeon Platinum 8158)

**Platform Notes (Continued)**

```
CPU MHz:               3000.000
BogoMIPS:              6005.49
Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              1024K
L3 cache:              25344K
NUMA node0 CPU(s):     0-2, 5, 7, 10, 24-26, 29, 31, 34
NUMA node1 CPU(s):     3, 4, 6, 8, 9, 11, 27, 28, 30, 32, 33, 35
NUMA node2 CPU(s):     12-14, 18-20, 36-38, 42-44
NUMA node3 CPU(s):     15-17, 21-23, 39-41, 45-47
```

/proc/cpuinfo cache data

```
cache size : 25344 KB
```

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

```
available: 4 nodes (0-3)
nodem0 cpus: 0 1 2 5 7 10 24 25 26 29 31 34
node0 size: 96433 MB
node0 free: 93542 MB
node1 cpus: 3 4 6 8 9 11 27 28 30 32 33 35
node1 size: 98304 MB
node1 free: 95578 MB
node2 cpus: 12 13 14 18 19 20 36 37 38 42 43 44
node2 size: 98304 MB
node2 free: 95358 MB
node3 cpus: 15 16 17 21 22 23 39 40 41 45 46 47
node3 size: 98304 MB
node3 free: 95580 MB
node distances:
nodem0 0 1 2 3
node1 11 10 21 21
node2 21 21 10 11
node3 21 21 11 10
```

From `/proc/meminfo`

```
MemTotal:       394168652 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)
Huawei CH225 V5 (Intel Xeon Platinum 8158)

SPECrate2017_fp_base = 170
SPECrate2017_fp_peak = 174

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 3.10.0-693.11.6.el7.x86_64 #1 SMP Thu Dec 28 14:23:39 EST 2017 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Oct 10 06:11
SPECS is set to: /spec2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 400G 9.6G 391G 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. 0.80 06/27/2018
Memory:
24x Samsung M393A2K43BB1-CTD 16 GB 2 rank 2666

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
 CC  519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base, peak)
==============================================================================

icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

==============================================================================
 CC  519.lbm_r(peak)
==============================================================================

icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

(Continued on next page)
## SPEC CPU2017 Floating Point Rate Result

### Huawei

**Huawei CH225 V5 (Intel Xeon Platinum 8158)**

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_fp_peak</td>
<td>174</td>
</tr>
</tbody>
</table>

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

- **Test Date:** Oct-2018  
- **Hardware Availability:** Jul-2017  
- **Software Availability:** Mar-2018

### Compiler Version Notes (Continued)

```plaintext
CXXC 508.namd_r(base) 510.parest_r(base, peak)
```

```
icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```plaintext
CXXC 508.namd_r(peak)
```

```
icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```plaintext
CC 511.povray_r(base) 526.blender_r(base, peak)
```

```
icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```plaintext
CC 511.povray_r(peak)
```

```
icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```plaintext
FC 507.cactuBSSN_r(base, peak)
```

```
icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

```plaintext
FC 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base)
```

```
ifort (IFORT) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
```

(Continued on next page)
## SPEC CPU2017 Floating Point Rate Result

<table>
<thead>
<tr>
<th>Huawei CH225 V5 (Intel Xeon Platinum 8158)</th>
<th>SPECrate2017_fp_base = 170</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPECrate2017_fp_peak = 174</td>
</tr>
</tbody>
</table>

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

### Compiler Version Notes (Continued)

---

**FC  554.roms_r(peak)**

- ifort (IFORT) 18.0.2 20180210
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

---

**CC  521.wrf_r(base) 527.cam4_r(base)**

- ifort (IFORT) 18.0.2 20180210
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
  - icc (ICC) 18.0.2 20180210
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

---

**CC  521.wrf_r(peak) 527.cam4_r(peak)**

- ifort (IFORT) 18.0.2 20180210
  - Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
  - icc (ICC) 18.0.2 20180210
  - 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

**Benchmarks using both Fortran and C:**

- ifort -m64 icc -m64 -std=c11

**Benchmarks using both C and C++:**

- icpc -m64 icc -m64 -std=c11

**Benchmarks using Fortran, C, and C++:**

- icpc -m64 icc -m64 -std=c11 ifort -m64
**SPEC CPU2017 Floating Point Rate Result**

**Huawei**

Huawei CH225 V5 (Intel Xeon Platinum 8158)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>170</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_fp_peak</td>
<td>174</td>
</tr>
</tbody>
</table>

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

**Base Portability Flags**

- 503.bwaves_r: -DSPEC_LP64
- 507.cactuBSSN_r: -DSPEC_LP64
- 508.namd_r: -DSPEC_LP64
- 510.parest_r: -DSPEC_LP64
- 511.povray_r: -DSPEC_LP64
- 519.lbm_r: -DSPEC_LP64
- 521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
- 526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
- 527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
- 538.imagick_r: -DSPEC_LP64
- 544.nab_r: -DSPEC_LP64
- 549.fotonik3d_r: -DSPEC_LP64
- 554.roms_r: -DSPEC_LP64

**Base Optimization Flags**

**C benchmarks:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

**C++ benchmarks:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

**Fortran benchmarks:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

**Benchmarks using both Fortran and C:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs

**Benchmarks using both C and C++:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

**Benchmarks using Fortran, C, and C++:**
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs
Huawei
Huawei CH225 V5 (Intel Xeon Platinum 8158)

SPECrate2017_fp_base = 170
SPECrate2017_fp_peak = 174

CPU2017 License: 3175
Test Sponsor: Huawei
Test Date: Oct-2018
Tested by: Huawei
Hardware Availability: Jul-2017
Software Availability: Mar-2018

Peak Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
ifort -m64 icc -m64 -std=c11

Benchmarks using both C and C++:
icpc -m64 icc -m64 -std=c11

Benchmarks using Fortran, C, and C++:
icpc -m64 icc -m64 -std=c11 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
519.lbm_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

538.imagick_r: basepeak = yes

544.nab_r: basepeak = yes

C++ benchmarks:
508.namd_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

510.parest_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3

(Continued on next page)
## SPEC CPU2017 Floating Point Rate Result

**Huawei**

**Huawei CH225 V5 (Intel Xeon Platinum 8158)**

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

### SPECrate2017_fp_base = 170

### SPECrate2017_fp_peak = 174

---

## Peak Optimization Flags (Continued)

**Fortran benchmarks:**

- 503.bwaves_r:
  - `xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch`
  - `-ffinite-math-only -qopt-mem-layout-trans=3 -auto`
  - `-nostandard-realloc-lhs`

- 549.fotonik3d_r:
  - Same as 503.bwaves_r

- 554.roms_r:
  - `-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3`
  - `-no-prec-div -qopt-prefetch -ffinite-math-only`
  - `-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs`

**Benchmarks using both Fortran and C:**

- 521.wrf_r:
  - `basepeak = yes`

- 527.cam4_r:
  - `-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3`
  - `-no-prec-div -qopt-prefetch -ffinite-math-only`
  - `-qopt-mem-layout-trans=3 -auto -nostandard-realloc-lhs`

**Benchmarks using both C and C++:**

- 511.povray_r:
  - `-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3`
  - `-no-prec-div -qopt-prefetch -ffinite-math-only`
  - `-qopt-mem-layout-trans=3`

- 526.blender_r:
  - `xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch`
  - `-ffinite-math-only -qopt-mem-layout-trans=3`

**Benchmarks using Fortran, C, and C++:**

- `-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only`
  - `-qopt-mem-layout-trans=3 -auto -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:

<table>
<thead>
<tr>
<th>Huawei CH225 V5 (Intel Xeon Platinum 8158)</th>
<th>SPECrate2017_fp_base = 170</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_fp_peak = 174</td>
<td></td>
</tr>
</tbody>
</table>

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

SPEC is a registered trademark 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 CPU2017 v1.0.2 on 2018-10-10 14:46:19-0400.
Originally published on 2018-10-30.