Huawei
Huawei 2288H V5 (Intel Xeon Gold 6138)

<table>
<thead>
<tr>
<th>Software</th>
<th>SPECrate2017_fp_base = 180</th>
<th>SPECrate2017_fp_peak = 184</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2017 License:</td>
<td>3175</td>
<td></td>
</tr>
<tr>
<td>Test Sponsor:</td>
<td>Huawei</td>
<td></td>
</tr>
<tr>
<td>Tested by:</td>
<td>Huawei</td>
<td></td>
</tr>
<tr>
<td>Test Date:</td>
<td>Dec-2017</td>
<td></td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Jul-2017</td>
<td></td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Sep-2017</td>
<td></td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Test</th>
<th>SPECrate2017_fp_base (180)</th>
<th>SPECrate2017_fp_peak (184)</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>508.namd_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>510.parest_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>511.povray_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>519.ibm_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>526.blender_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>544.nab_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>554.roms_r</td>
<td>80</td>
<td></td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>OS:</th>
<th>Red Hat Enterprise Linux Server 7.3 (Maipo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux; Fortran: Version 18.0.0.128 of Intel Fortran Compiler for Linux</td>
</tr>
<tr>
<td>Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>Firmware:</td>
<td>Version 0.31 Released Sep-2017</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>

### CPU Specifications

- **CPU Name:** Intel Xeon Gold 6138
- **Max MHz.:** 3700
- **Nominal:** 2000
- **Enabled:** 40 cores, 2 chips, 2 threads/core
- **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:** 27.5 MB I+D on chip per chip
- **Orderable:** None
- **Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2666V-R)
- **Storage:** 1 x 1200 GB SAS, 10000 RPM
- **Orderable:** None

---

Standard Performance Evaluation Corporation (info@spec.org)  https://www.spec.org/
Huawei
Huawei 2288H V5 (Intel Xeon Gold 6138)

SPEC CPU2017 Floating Point Rate Result
Copyright 2017-2018 Standard Performance Evaluation Corporation

SPECrate2017_fp_base = 180
SPECrate2017_fp_peak = 184

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>80</td>
<td>1670</td>
<td>480</td>
<td>1668</td>
<td>481</td>
<td>1669</td>
<td>481</td>
<td>80</td>
<td>1668</td>
<td>481</td>
<td>1669</td>
<td>481</td>
<td>1670</td>
<td>480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>80</td>
<td>617</td>
<td>164</td>
<td>616</td>
<td>164</td>
<td>616</td>
<td>164</td>
<td>80</td>
<td>617</td>
<td>164</td>
<td>616</td>
<td>164</td>
<td>616</td>
<td>164</td>
<td></td>
<td></td>
</tr>
<tr>
<td>508.namd_r</td>
<td>80</td>
<td>567</td>
<td>134</td>
<td>568</td>
<td>134</td>
<td>569</td>
<td>134</td>
<td>80</td>
<td>559</td>
<td>136</td>
<td>563</td>
<td>135</td>
<td>562</td>
<td>135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>511.povray_r</td>
<td>80</td>
<td>890</td>
<td>210</td>
<td>889</td>
<td>210</td>
<td>892</td>
<td>210</td>
<td>80</td>
<td>746</td>
<td>251</td>
<td>745</td>
<td>251</td>
<td>753</td>
<td>248</td>
<td></td>
<td></td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>80</td>
<td>763</td>
<td>110</td>
<td>762</td>
<td>111</td>
<td>762</td>
<td>111</td>
<td>80</td>
<td>737</td>
<td>114</td>
<td>737</td>
<td>114</td>
<td>741</td>
<td>114</td>
<td></td>
<td></td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>80</td>
<td>873</td>
<td>205</td>
<td>909</td>
<td>197</td>
<td>882</td>
<td>203</td>
<td>80</td>
<td>884</td>
<td>203</td>
<td>861</td>
<td>208</td>
<td>867</td>
<td>207</td>
<td></td>
<td></td>
</tr>
<tr>
<td>526.blender_r</td>
<td>80</td>
<td>624</td>
<td>195</td>
<td>624</td>
<td>195</td>
<td>626</td>
<td>195</td>
<td>80</td>
<td>617</td>
<td>198</td>
<td>620</td>
<td>197</td>
<td>620</td>
<td>197</td>
<td></td>
<td></td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>80</td>
<td>676</td>
<td>207</td>
<td>677</td>
<td>207</td>
<td>676</td>
<td>207</td>
<td>80</td>
<td>669</td>
<td>209</td>
<td>669</td>
<td>209</td>
<td>670</td>
<td>209</td>
<td></td>
<td></td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>80</td>
<td>679</td>
<td>293</td>
<td>681</td>
<td>292</td>
<td>680</td>
<td>293</td>
<td>80</td>
<td>680</td>
<td>292</td>
<td>680</td>
<td>293</td>
<td>679</td>
<td>293</td>
<td></td>
<td></td>
</tr>
<tr>
<td>544.nab_r</td>
<td>80</td>
<td>527</td>
<td>255</td>
<td>531</td>
<td>253</td>
<td>526</td>
<td>256</td>
<td>80</td>
<td>515</td>
<td>261</td>
<td>512</td>
<td>263</td>
<td>515</td>
<td>262</td>
<td></td>
<td></td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>80</td>
<td>2126</td>
<td>147</td>
<td>2124</td>
<td>147</td>
<td>2125</td>
<td>147</td>
<td>80</td>
<td>2127</td>
<td>147</td>
<td>2126</td>
<td>147</td>
<td>2127</td>
<td>147</td>
<td></td>
<td></td>
</tr>
<tr>
<td>554.roms_r</td>
<td>80</td>
<td>1437</td>
<td>88.5</td>
<td>1442</td>
<td>88.1</td>
<td>1443</td>
<td>88.1</td>
<td>80</td>
<td>1404</td>
<td>90.5</td>
<td>1399</td>
<td>90.9</td>
<td>1400</td>
<td>90.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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 i7-4790 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
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

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

SPECraten2017_fp_base = 180
SPECraten2017_fp_peak = 184

Test Date: Dec-2017  
Hardware Availability: Jul-2017  
Software Availability: Sep-2017

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 96c45e4568ad54c135fd618bcc091c0f
running on localhost.localdomain Sun Dec 17 04:15:08 2017

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 6138 CPU @ 2.00GHz
  2 "physical id"s (chips)
  80 "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 : 20
siblings : 40
physical 0: cores 0 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
physical 1: cores 0 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

From lscpu:
Architecture:                x86_64
CPU op-mode(s):             32-bit, 64-bit
Byte Order:                 Little Endian
CPU(s):                     80
On-line CPU(s) list:        0-79
Thread(s) per core:         2
Core(s) per socket:         20
Socket(s):                  2
NUMA node(s):               4
Vendor ID:                  GenuineIntel
CPU family:                 6
Model:                      85
Model name:                 Intel(R) Xeon(R) Gold 6138 CPU @ 2.00GHz
Stepping:                   4
CPU MHz:                    2000.000
BogoMIPS:                   4004.17
Virtualization:             VT-x
L1d cache:                  32K
L1i cache:                  32K
L2 cache:                   1024K
L3 cache:                   28160K
NUMA node0 CPU(s):          0-2,5,6,10-12,15,16,40-42,45,46,50-52,55,56

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

Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

Copyright 2017-2018 Standard Performance Evaluation Corporation

SPECrate2017_fp_base = 180
SPECrate2017_fp_peak = 184

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>3175</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date:</td>
<td>Dec-2017</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>Sep-2017</td>
</tr>
</tbody>
</table>

Platform Notes (Continued)

NUMA node1 CPU(s): 3, 4, 7–9, 13, 14, 17–19, 43, 44, 47–49, 53, 54, 57–59
NUMA node2 CPU(s): 20–22, 25, 26, 30–32, 35, 36, 60–62, 65, 66, 70–72, 75, 76
NUMA node3 CPU(s): 23, 24, 27–29, 33, 34, 37–39, 63, 64, 67–69, 73, 74, 77–79

/proc/cpuinfo cache data
cache size : 28160 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.
available: 4 nodes (0-3)
node 0 cpus: 0 1 2 5 6 10 11 12 15 16 40 41 42 45 46 50 51 52 55 56
node 0 size: 96405 MB
node 0 free: 92811 MB
node 1 cpus: 3 4 7 8 9 13 14 17 18 19 43 44 47 48 49 53 54 57 58 59
node 1 size: 98304 MB
node 1 free: 95071 MB
node 2 cpus: 20 21 22 25 26 30 31 32 35 36 60 61 62 65 66 70 71 72 75 76
node 2 size: 98304 MB
node 2 free: 94362 MB
node 3 cpus: 23 24 27 28 29 33 34 37 38 39 63 64 67 68 69 73 74 77 78 79
node 3 size: 98304 MB
node 3 free: 95062 MB
node distances:
node 0 1 2 3
0: 10 11 21 21
1: 11 10 21 21
2: 21 21 10 11
3: 21 21 11 10

From /proc/meminfo
MemTotal: 394144696 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
osi-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.3 (Maipo)"
ID="rhel"
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)

(Continued on next page)
Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>SPECrate2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>184</td>
</tr>
</tbody>
</table>

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

Platform Notes (Continued)

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 Dec 13 21:55

SPEC is set to: /spec2017

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 781G 227G 554G 30% /

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 519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base)
--------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------
CC 519.lbm_r(peak) 544.nab_r(peak)
--------------------------------------------------------------------------------
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------
CXXC 508.namd_r(base) 510.parest_r(base)
--------------------------------------------------------------------------------
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------
CXXC 508.namd_r(peak) 510.parest_r(peak)

(Continued on next page)
Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

SPECrate2017 fp_base = 180
SPECrate2017 fp_peak = 184

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

Compiler Version Notes (Continued)

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

==============================================================================
CC  511.povray_r(base) 526.blender_r(base)
==============================================================================

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

==============================================================================
CC   511.povray_r(peak) 526.blender_r(peak)
==============================================================================

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

==============================================================================
FC  507.cactuBSSN_r(base)
==============================================================================

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

==============================================================================
FC   507.cactuBSSN_r(peak)
==============================================================================

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

==============================================================================
FC  503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base)
(Continued on next page)
Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

SPECrate2017_fp_base = 180
SPECrate2017_fp_peak = 184

Compiler Version Notes (Continued)

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

==============================================================================
FC  554.roms_r(peak)
==============================================================================
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

==============================================================================
CC  521.wrf_r(base) 527.cam4_r(base)
==============================================================================
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

==============================================================================
CC  521.wrf_r(peak) 527.cam4_r(peak)
==============================================================================
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
icc (ICC) 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

Benchmarks using both Fortran and C:
  ifort icc

Benchmarks using both C and C++:
  icpc icc

(Continued on next page)
Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

<table>
<thead>
<tr>
<th>SPECrate2017_fp_base</th>
<th>SPECrate2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>180</td>
<td>184</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 3175  
**Test Sponsor:** Huawei  
**Test Date:** Dec-2017  
**Hardware Availability:** Jul-2017  
**Tested by:** Huawei  
**Software Availability:** Sep-2017

### Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:

```
icpc icc ifort
```

### 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 -nostandard-realloc-lhs -align array32byte
```

Benchmarks using both Fortran and C:

```
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
```

Benchmarks using both C and C++:

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

(Continued on next page)
Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

SPECrare2017_fp_base = 180  
SPECrare2017_fp_peak = 184

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

Test Date: Dec-2017  
Hardware Availability: Jul-2017  
Software Availability: Sep-2017

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

Base Other Flags

C benchmarks:
-m64 -std=c11  

C++ benchmarks:
-m64

Fortran benchmarks:
-m64

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

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

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

Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icc

Benchmarks using both C and C++:
icpc icc

(Continued on next page)
Huawei

Huawei 2288H V5 (Intel Xeon Gold 6138)

SPECrate2017_fp_base = 180
SPECrate2017_fp_peak = 184

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

Peak Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:
icpc icc ifort

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

544.nab_r: Same as 519.lbm_r

C++ benchmarks:

-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3

Fortran benchmarks:

503.bwaves_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3
-nostandard-realloc-lhs -align array32byte

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 -nostandard-realloc-lhs
-align array32byte

Benchmarks using both Fortran and C:

-ipo -xCORE-AVX2 -O3

(Continued on next page)
Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
- no-prec-div -qopt-prefetch -ffinite-math-only
- qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

Benchmarks using both C and C++:
- 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

Benchmarks using Fortran, C, and C++:
507.cactuBSSN_r: basepeak = yes

Peak Other Flags

C benchmarks:
- m64 -std=c11

C++ benchmarks:
- m64

Fortran benchmarks:
- m64

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

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

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

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


## SPEC CPU2017 Floating Point Rate Result

<table>
<thead>
<tr>
<th>Huawei 2288H V5 (Intel Xeon Gold 6138)</th>
<th>SPECrate2017_fp_base = 180</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SPECrate2017_fp_peak = 184</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CPU2017 License:</strong></th>
<th>3175</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Sponsor:</strong></td>
<td>Huawei</td>
</tr>
<tr>
<td><strong>Tested by:</strong></td>
<td>Huawei</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Test Date:</strong></th>
<th>Dec-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware Availability:</strong></td>
<td>Jul-2017</td>
</tr>
<tr>
<td><strong>Software Availability:</strong></td>
<td>Sep-2017</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 2017-12-17 04:15:07-0500.
Report generated on 2018-10-31 17:01:04 by CPU2017 PDF formatter v6067.
Originally published on 2018-01-10.