SPEC CPU®2017 Floating Point Rate Result

Huawei 2288H V5 (Intel Xeon Gold 5220R)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>255</td>
<td>255</td>
</tr>
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</table>

CPU2017 License: 6177  Test Date: Jul-2020
Test Sponsor: China Academy of Information and Communications Technology
Tested by: China Academy of Information and Communications Technology

Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 5220R</td>
</tr>
<tr>
<td>Max MHz</td>
<td>4000</td>
</tr>
<tr>
<td>Nominal</td>
<td>2200</td>
</tr>
<tr>
<td>Enabled</td>
<td>48 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>35.75 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Memory:</td>
<td>768 GB (24 x 32 GB 2Rx4 PC4-2933Y-R, running at 2666)</td>
</tr>
<tr>
<td>Storage:</td>
<td>1 x 800 GB SAS SSD</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
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Software

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>SUSE Linux Enterprise Server 12 SP4 (x86_64)</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 19.1.1.217 of Intel C/C++ Compiler for Linux; Fortran: Version 19.1.1.217 of Intel Fortran Compiler for Linux</td>
</tr>
<tr>
<td>Parallel</td>
<td>No</td>
</tr>
<tr>
<td>Firmware</td>
<td>Version 6.83 released Jun-2019</td>
</tr>
<tr>
<td>File System</td>
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</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>
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<tr>
<td>Other:</td>
<td>jemalloc memory allocator V5.0.1</td>
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(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

Huawei 2288H V5 (Intel Xeon Gold 5220R)

CPU2017 License: 6177
Test Sponsor: China Academy of Information and Communications Technology
Tested by: China Academy of Information and Communications Technology
Test Date: Jul-2020
Hardware Availability: Mar-2020
Software Availability: Apr-2020

Results Table

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<tr>
<th>Benchmark</th>
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<th>Ratio</th>
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<td>99.9</td>
<td>1528</td>
<td>99.8</td>
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</tr>
</tbody>
</table>

Software (Continued)

Power Management: BIOS set to prefer performance at the cost of additional power usage.

Compiler Notes

The inconsistent Compiler version information under Compiler Version section is due to a discrepancy in Intel Compiler.

The correct version of C/C++ compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux

The correct version of Fortran compiler is: Version 19.1.1.217 Build 20200306 Compiler for Linux

SPEC has learned that this result, which used an evaluation compiler, was submitted contrary to the compiler license terms.

Intel has granted a one-time waiver for this result.

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"
Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
"/opt/intel/compilers_and_libraries_2020.1.217/linux/compiler/lib/intel64:/usr/local/jemalloc64-5.0.1"
MALLOC_CONF = "retain:true"

General Notes

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>
NA: 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.
jemalloc, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

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: r6365 of 2019-08-21 295195f888a3d7edbble6e46a485a0011
running on linux-r48i Fri Jul 10 01:00:12 2020

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 5220R CPU @ 2.20GHz
   2 "physical id"s (chips)

(Continued on next page)
Huawei 2288H V5 (Intel Xeon Gold 5220R)

- CPU2017 License: 6177
- Test Sponsor: China Academy of Information and Communications Technology
- Tested by: China Academy of Information and Communications Technology
- SPECrate\textsuperscript{®}2017\_fp\_base = 255
- SPECrate\textsuperscript{®}2017\_fp\_peak = 255

**Platform Notes (Continued)**

96 "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 : 48
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 9 10 11 12 13 16 17 18 19 20 21 25 26 27 28 29
```

From lscpu:
```
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 96
On-line CPU(s) list: 0-95
Thread(s) per core: 2
Core(s) per socket: 24
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 5220R CPU @ 2.20GHz
Stepping: 7
CPU MHz: 2200.000
CPU max MHz: 4000.0000
CPU min MHz: 1000.0000
BogoMIPS: 4400.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 36608K
NUMA node0 CPU(s): 0-3,7-9,13-15,19,20,48-51,55-57,61-63,67,68
NUMA node1 CPU(s): 4-6,10-12,16-18,21-23,25-54,58-60,64-66,69-71
NUMA node2 CPU(s): 24-27,31-33,37-39,43,44,72-75,79-81,85-87,91,92
NUMA node3 CPU(s): 28-30,34-36,40-42,45-47,76-78,82-84,88-90,93-95
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 arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
aperfpmperf pni pclmulqdq dtes64 ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm
pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c
rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_13 cdp_13 invpcid_single ssbd
mba ibrs stibp tpr_shadow vnumi flexpriority ept vpid fsgsbase tsc_adjust bmi1
hle avx2 smep bmi2 ets invpcid rtm cqm mpx rdt a avx512f avx512q rdseed adx smap
clfushopt clwb intel_pt avx512cd avx512bw avx512vl xsaveopt xsavec xgetbv xsave

(Continued on next page)
Huawei

Huawei 2288H V5 (Intel Xeon Gold 5220R)

<table>
<thead>
<tr>
<th>SPEC®2017 Floating Point Rate Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huawei</td>
</tr>
<tr>
<td></td>
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<table>
<thead>
<tr>
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<th>Test Date: Jul-2020</th>
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</thead>
<tbody>
<tr>
<td>Test Sponsor: Huawei Technology</td>
<td>Hardware Availability: Mar-2020</td>
</tr>
<tr>
<td>Tested by: Huawei Technology</td>
<td>Software Availability: Apr-2020</td>
</tr>
</tbody>
</table>

Platform Notes (Continued)

```
cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local dtherm ida arat pln pts pku ospke
avx512_vnni flush_l1d arch_capabilities
```

```
/proc/cpuinfo cache data
cache size : 36608 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 3 7 8 9 13 14 15 19 20 48 49 50 51 55 56 57 61 62 63 67 68
node 0 size: 191973 MB
node 0 free: 190867 MB
node 1 cpus: 4 5 6 10 11 12 16 17 18 21 22 23 52 53 54 58 59 60 64 65 66 69 70 71
node 1 size: 193531 MB
node 1 free: 192426 MB
node 2 cpus: 24 25 26 27 31 32 33 37 38 39 43 44 72 73 74 75 79 80 81 85 86 87 91 92
node 2 size: 193502 MB
node 2 free: 192482 MB
node 3 cpus: 28 29 30 34 35 36 40 41 42 45 46 47 76 77 78 82 83 84 88 89 90 93 94 95
node 3 size: 193321 MB
node 3 free: 192052 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: 790864816 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

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

```
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 4
  # This file is deprecated and will be removed in a future service pack or release.
  # Please check /etc/os-release for details about this release.
os-release:
  NAME="SLES"
  VERSION="12-SP4"
  VERSION_ID="12.4"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP4"
```

(Continued on next page)
Huawei 2288H V5 (Intel Xeon Gold 5220R)

CPU2017 License: 6177
Test Sponsor: China Academy of Information and Communications Technology
Tested by: China Academy of Information and Communications Technology

Platform Notes

Spec CPU®2017 Floating Point Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

Test Date: Jul-2020
Hardware Availability: Mar-2020
Software Availability: Apr-2020

SPECrate®2017_fp_base = 255
SPECrate®2017_fp_peak = 255

Huawei
(Test Sponsor: China Academy of Information and Communications Technology)

SPECrate®2017_fp_base = 255
SPECrate®2017_fp_peak = 255

CPU2017 License: 6177
Test Sponsor: China Academy of Information and Communications Technology
Tested by: China Academy of Information and Communications Technology

Platform Notes (Continued)

- 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-2018-3620 (L1 Terminal Fault): Not affected
- CVE-2017-5754 (Meltdown): Not affected
- CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
- 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 Jul 9 12:16

SPEC is set to: /spec2017

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda3 xfs 730G 114G 617G 16% /

From /sys/devices/virtual/dmi/id
BIOS: INSYDE Corp. 6.83 06/29/2019
Vendor: Huawei
Product: 2288H V5
Product Family: Purley
Serial: Huawei

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.

Memory:
24x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933, configured at 2666

(End of data from sysinfo program)
**Huawei 2288H V5 (Intel Xeon Gold 5220R)**

<table>
<thead>
<tr>
<th><strong>SPECrate®2017_fp_base</strong></th>
<th>255</th>
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### Compiler Version Notes

<table>
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<th>Program</th>
<th>Programs</th>
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## SPEC CPU®2017 Floating Point Rate Result

**Huawei**

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### Huawei 2288H V5 (Intel Xeon Gold 5220R)

| SPECrate®2017_fp_base = 255 | SPECrate®2017_fp_peak = 255 |

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### Compiler Version Notes (Continued)

<table>
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<tr>
<th>554.roms_r(base, peak)</th>
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</thead>
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Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.1.217 Build 20200306

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

ifort: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

==============================================================================

<table>
<thead>
<tr>
<th>Fortran, C</th>
<th>521.wrf_r(base) 527.cam4_r(base, peak)</th>
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</thead>
</table>

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Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.1.217 Build 20200306

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ifort: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1 NextGen Build 20200304

Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

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<tr>
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<th>521.wrf_r(peak)</th>
</tr>
</thead>
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Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.1.217 Build 20200306

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ifort: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

Intel(R) C Compiler for applications running on Intel(R) 64, Version 19.1.1.217 Build 20200306

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icc: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

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ifort: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.

Intel(R) C Compiler for applications running on Intel(R) 64, Version 2021.1 NextGen Build 20200304

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(Continued on next page)
Huawei 2288H V5 (Intel Xeon Gold 5220R)

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<th>CPU2017 License: 6177</th>
<th>Test Date: Jul-2020</th>
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</thead>
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<tr>
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<td>Tested by: China Academy of Information and Communications Technology</td>
<td>Software Availability: Apr-2020</td>
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</tbody>
</table>

**SPECrater®2017_fp_base = 255**

**SPECrater®2017_fp_peak = 255**

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**Compiler Version Notes (Continued)**

<table>
<thead>
<tr>
<th>Compiler</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.1.217 Build 20200306</td>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
</tr>
<tr>
<td>ifort: NOTE: The evaluation period for this product ends on 30-jul-2020 UTC.</td>
<td></td>
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<td>Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.1.1.217 Build 20200306</td>
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**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

- **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

(Continued on next page)
Huawei 2288H V5 (Intel Xeon Gold 5220R)

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Base Portability Flags (Continued)

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:
- -m64 -qnextgen -std=c11
- -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
- -fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse
- -funroll-loops -qopt-mem-layout-trans=4 -L/usr/local/jemalloc64-5.0.1/ -ljemalloc

C++ benchmarks:
- -m64 -qnextgen -Wl,-plugin-opt=-x86-branches-within-32B-boundaries
- -Wl,-z,muldefs -fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto
- -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
- -L/usr/local/jemalloc64-5.0.1/ -ljemalloc

Fortran benchmarks:
- -m64 -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
- -fuse-ld=gold -xCORE-AVX2 -O3 -ipo -no-prec-div -qopt-prefetch
- -ffinite-math-only -qopt-multiple-gather-scatter-by-shuffles
- -qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
- -auto -mbranches-within-32B-boundaries -L/usr/local/jemalloc64-5.0.1/ -ljemalloc

Benchmarks using both Fortran and C:
- -m64 -qnextgen -std=c11
- -Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
- -fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse
- -funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo -no-prec-div
- -qopt-prefetch -ffinite-math-only
- -qopt-multiple-gather-scatter-by-shuffles -nostandard-realloc-lhs
- -align array32byte -auto -mbranches-within-32B-boundaries
- -L/usr/local/jemalloc64-5.0.1/ -ljemalloc

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

Huawei

Huawei 2288H V5 (Intel Xeon Gold 5220R)

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Base Optimization Flags (Continued)

Benchmarks using both C and C++:
- m64 -qnextgen -std=c11
- Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
- fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse
- funroll-loops -qopt-mem-layout-trans=4 -L/usr/local/jemalloc64-5.0.1/ -ljemalloc

Benchmarks using Fortran, C, and C++:
- m64 -qnextgen -std=c11
- Wl,-plugin-opt=-x86-branches-within-32B-boundaries -Wl,-z,muldefs
- fuse-ld=gold -xCORE-AVX2 -Ofast -ffast-math -flto -mfpmath=sse
- funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo -no-prec-div
- qopt-prefetch -ffinite-math-only
- qopt-multiple-gather-scatter-by-shuffles -nostandard-realloc-lhs
- align array32byte -auto -mbranches-within-32B-boundaries
- L/usr/local/jemalloc64-5.0.1/ -ljemalloc

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

Benchmarks using Fortran, C, and C++:
icpc icc ifort
Huawei 2288H V5 (Intel Xeon Gold 5220R)

CPU2017 License: 6177
Test Sponsor: China Academy of Information and Communications Technology
Tested by: China Academy of Information and Communications Technology

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
519.lbm_r: basepeak = yes
538.imagick_r: basepeak = yes
544.nab_r: basepeak = yes

C++ benchmarks:
508.namd_r: basepeak = yes

510.parest_r: -m64 -qnextgen
-W1,-plugin-opt=-x86-branches-within-32B-boundaries
-W1,-z,muldefs -fuse-ld=gold -xCORE-AVX2 -0fast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc64-5.0.1/
-ljemalloc

Fortran benchmarks:
503.bwaves_r: -m64 -W1,-plugin-opt=-x86-branches-within-32B-boundaries
-W1,-z,muldefs -fuse-ld=gold -xCORE-AVX2 -03 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs
-align array32byte -auto -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/ -ljemalloc

549.fotonik3d_r: basepeak = yes
554.roms_r: Same as 503.bwaves_r

Benchmarks using both Fortran and C:
521.wrf_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX2 -03 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles

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

521.wrf_r (continued):
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/-ljemalloc

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

511.povray_r: -m64 -qnextgen -std=c11
-Wl,-plugin-opt=-x86-branches-within-32B-boundaries
-Wl,-z,muldefs -fuse-ld=gold -flto -xCORE-AVX2 -Ofast
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc64-5.0.1/-ljemalloc

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/CAOIACT-Platform-Settings-CASC-V1.0.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic19.1u1-official-linux64_revB.xml
http://www.spec.org/cpu2017/flags/CAOIACT-Platform-Settings-CASC-V1.0.xml