## SPEC CPU®2017 Floating Point Rate Result

### Hewlett Packard Enterprise

(Test Sponsor: HPE)

**ProLiant DL360 Gen10 Plus**

(2.20 GHz, Intel Xeon Platinum 8352Y)

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**SPECrater®2017_fp_base = 408**

**SPECrater®2017_fp_peak = 428**

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**CPU2017 License:** 3  
**Test Sponsor:** HPE  
**Tested by:** HPE  
**Test Date:** Jun-2021  
**Hardware Availability:** Jun-2021  
**Software Availability:** Dec-2020

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECrate®2017_fp_base (408)</th>
<th>SPECrate®2017_fp_peak (428)</th>
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<td>732</td>
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<td>507.cactuBSSN_r</td>
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<td>508.namd_r</td>
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<td>510.parest_r</td>
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<tr>
<td>554.roms_r</td>
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### Hardware

- **OS:** Red Hat Enterprise Linux 8.3 (Ootpa)  
  - Kernel 4.18.0-240.el8.x86_64
- **Compiler:** C/C++: Version 2021.1 of Intel oneAPI DPC++/C++  
  - Compiler Build 20201113 for Linux;  
  - Fortran: Version 2021.1 of Intel Fortran Compiler  
  - Classic Build 20201112 for Linux
- **Parallel:** No
- **Firmware:** HPE BIOS Version U46 v1.42 05/26/2021 released May-2021
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** jemalloc memory allocator V5.0.1

---

### Software

- **CPU Name:** Intel Xeon Platinum 8352Y  
  - Max MHz: 3400  
  - Nominal: 2200
- **Enabled:** 64 cores, 2 chips, 2 threads/core
- **Orderable:** 1, 2 chip(s)
- **Cache L1:** 32 KB I + 48 KB D on chip per core  
  - L2: 1.25 MB I+D on chip per core  
  - L3: 48 MB I+D on chip per chip
- **Other:** None
- **Memory:** 2 TB (32 x 64 GB 2Rx4 PC4-3200AA-R)
- **Storage:** 1 x 800 GB SAS SSD, RAID 0
- **Other:** None

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(Continued on next page)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10 Plus
(2.20 GHz, Intel Xeon Platinum 8352Y)

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

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**Results Table**

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<td>190</td>
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</tr>
</tbody>
</table>

**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"
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

**Environment Variables Notes**

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-64"
MALLOC_CONF = "retain:true"
SPEC CPU®2017 Floating Point Rate Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10 Plus
(2.20 GHz, Intel Xeon Platinum 8352Y)

SPECrate®2017_fp_base = 408
SPECrate®2017_fp_peak = 428

CPU2017 License: 3
Test Sponsor: HPE
Tested by: HPE

General Notes

Binaries compiled on a system with 1x Intel Core i9-7980XE CPU + 64GB RAM
memory using Red Hat Enterprise Linux 8.1
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

Submitted by: "Bhatnagar, Prateek" <prateek.bhatnagar@hpe.com>
Submitted: Mon Jul 5 08:12:15 EDT 2021
Submission: cpu2017-20210705-27780.sub

Platform Notes

The system ROM used for this result contains Intel microcode version 0xd0002a0 for
the Intel Xeon Platinum 8352Y processor.
BIOS Configuration:
  Workload Profile set to General Throughput Compute
  Memory Patrol Scrubbing set to Disabled
  Advanced Memory Protection set to Advanced ECC
  Last Level Cache (LLC) Prefetch set to Enabled
  Last Level Cache (LLC) Dead Line Allocation set to Disabled
  Enhanced Processor Performance set to Enabled
  Enhanced Processor Performance Profile set to Aggressive
  Thermal Configuration set to Maximum Cooling
  Workload Profile set to Custom
    DCU Stream Prefetcher set to Disabled
    XPT Remote Prefetcher set to Enabled
    Energy/Performance Bias set to Balanced Performance

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915bf5b891ef0e16aca64d
running on localhost.localdomain Sat Jun 19 09:06:35 2021

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 8352Y CPU @ 2.20GHz

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

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Tested by: HPE
Test Date: Jun-2021
Hardware Availability: Jun-2021
Software Availability: Dec-2020

Platform Notes (Continued)

2 "physical id"s (chips)
128 "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 : 32
siblings : 64
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31

From lscpu from util-linux 2.32.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 128
On-line CPU(s) list: 0-127
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8352Y CPU @ 2.20GHz
Stepping: 6
CPU MHz: 2355.775
BogoMIPS: 4400.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 49152K
NUMA node0 CPU(s): 0-15,64-79
NUMA node1 CPU(s): 16-31,80-95
NUMA node2 CPU(s): 32-47,96-111
NUMA node3 CPU(s): 48-63,112-127
Flags: fpu vme de pse tsc msr pae mce 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 cpuid aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xprpt 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�� l3 invpcid_single sshd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erts invpcid cmq rdtr_a avx512f avx512dq rdseed adx smap avx512ifma cliflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsaveopt xsavec xsaveopt xgetbv1 xsavec qm_llc qm_occup_llc qm_mbm_total

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

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL360 Gen10 Plus
(2.20 GHz, Intel Xeon Platinum 8352Y)

**CPU2017 License:** 3
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| SPECrate®2017_fp_peak = 428 |

**Test Date:** Jun-2021
**Hardware Availability:** Jun-2021
**Software Availability:** Dec-2020

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**Platform Notes (Continued)**

cqm_mbm_local split_lock_detect wbnoinvd dtherm ida arat pln pts avx512vbmi umip pku ospe akxv512_vbmi2 gfini vaes vpcimulqdf avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rpdpd md_clear pconfig flush_l1d arch_capabilities

```
/proc/cpuinfo cache data
  cache size : 49152 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 4 5 6 7 8 9 10 11 12 13 14 15 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79
  node 0 size: 501384 MB
  node 0 free: 515234 MB
node 1 cpus: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95
  node 1 size: 501930 MB
  node 1 free: 515714 MB
node 2 cpus: 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111
  node 2 size: 501296 MB
  node 2 free: 515672 MB
node 3 cpus: 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127
  node 3 size: 501944 MB
  node 3 free: 515689 MB
node distances:
  node 0: 10 20 30 30
  node 1: 20 10 30 30
  node 2: 30 30 10 20
  node 3: 30 30 20 10

From /proc/meminfo
  MemTotal: 2113474316 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

/sbin/tuned-adm active
  Current active profile: throughput-performance

From /etc/*release* /etc/*version*
  os-release:
    NAME="Red Hat Enterprise Linux"
    VERSION="8.3 (Ootpa)"
    ID="rhel"
    ID_LIKE="fedora"
```

(Continued on next page)
Hewlett Packard Enterprise
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SPECrade®2017_fp_base = 408
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Platform Notes (Continued)

VERSION_ID="8.3"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
Linux localhost.localdomain 4.18.0-240.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit): Not affected
CVE-2018-3620 (L1 Terminal Fault): Not affected
Microarchitectural Data Sampling: Not affected
CVE-2017-5754 (Meltdown): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2018-3639 (Speculative Store Bypass): Mitigation: usercopy/swaps barriers and __user pointer sanitization
CVE-2017-5753 (Spectre variant 1): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2017-5715 (Spectre variant 2): Not affected
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Jun 19 09:05

SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel00-home xfs 670G 120G 550G 18% /home

From /sys/devices/virtual/dmi/id
Vendor: HPE
Product: ProLiant DL360 Gen10 Plus
Product Family: ProLiant
Serial: CN701108CK

Additional information from dmidecode 3.2 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:
32x Micron 36ASF8G72PZ-3G2B2 64 GB 2 rank 3200

(Continued on next page)
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Tested by: HPE

Platform Notes (Continued)

BIOS:
BIOS Vendor: HPE
BIOS Version: U46
BIOS Date: 05/26/2021
BIOS Revision: 1.42
Firmware Revision: 2.50

(End of data from sysinfo program)

Compiler Version Notes

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++
508.namd_r(base, peak) 510.parest_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C
511.povray_r(peak)

Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C
511.povray_r(base) 526.blender_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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(Continued on next page)
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Compiler Version Notes (Continued)

C++, C | 511.povray_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C | 511.povray_r(base) 526.blender_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

C++, C, Fortran | 507.cactuBSSN_r(base, peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

Fortran | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_r(base, peak)

Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Hewlett Packard Enterprise

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CPU2017 License: 3
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Test Date: Jun-2021
Hardware Availability: Jun-2021
Software Availability: Dec-2020

Compiler Version Notes (Continued)

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==============================================================================
Fortran, C | 521.wrf_r(peak)
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Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
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-----------------------------------------------------------------------------
Fortran, C | 521.wrf_r(peak)
-----------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

-----------------------------------------------------------------------------
Fortran, C | 521.wrf_r(base) 527.cam4_r(base, peak)
-----------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
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# SPEC CPU® 2017 Floating Point Rate Result

## Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL360 Gen10 Plus

(2.20 GHz, Intel Xeon Platinum 8352Y)

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### SPECrate® 2017_fp_base = 408

### SPECrate® 2017_fp_peak = 428

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| CPU2017 License: | 3 |
| Test Sponsor: | HPE |
| Tested by: | HPE |

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### Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

ifort icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifort

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### 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

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### Base Optimization Flags

C benchmarks:

-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -gopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

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### SPEC CPU®2017 Floating Point Rate Result

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<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
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<td>408</td>
<td>428</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 3
**Test Sponsor:** HPE
**Tested by:** HPE

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#### Base Optimization Flags (Continued)

**C++ benchmarks:**
- `-w` `-m64` `-Wl,-z,muldefs` `-xCORE-AVX512` `-Ofast` `-ffast-math` `-flto`
- `-mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`
- `-mbranches-within-32B-boundaries` `-ljemalloc`
- `-L/usr/local/jemalloc64-5.0.1/lib`

**Fortran benchmarks:**
- `-w` `-m64` `-Wl,-z,muldefs` `-xCORE-AVX512` `-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` `-ljemalloc`
- `-L/usr/local/jemalloc64-5.0.1/lib`

**Benchmarks using both Fortran and C:**
- `-w` `-m64` `-std=c11` `-Wl,-z,muldefs` `-xCORE-AVX512` `-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`
- `-mbranches-within-32B-boundaries` `-nostandard-realloc-lhs`
- `-align array32byte` `-auto` `-ljemalloc` `-L/usr/local/jemalloc64-5.0.1/lib`

**Benchmarks using both C and C++:**
- `-w` `-m64` `-std=c11` `-Wl,-z,muldefs` `-xCORE-AVX512` `-Ofast` `-ffast-math`
- `-flto` `-mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4`
- `-mbranches-within-32B-boundaries` `-ljemalloc`
- `-L/usr/local/jemalloc64-5.0.1/lib`

**Benchmarks using Fortran, C, and C++:**
- `-w` `-m64` `-std=c11` `-Wl,-z,muldefs` `-xCORE-AVX512` `-Ofast` `-ffast-math`
- `-flto` `-mfpmath=sse` `-funroll-loops` `-qopt-mem-layout-trans=4` `-O3`
- `-no-prec-div` `-qopt-prefetch` `-ffinite-math-only`
- `-qopt-multiple-gather-scatter-by-shuffles`
- `-mbranches-within-32B-boundaries` `-nostandard-realloc-lhs`
- `-align array32byte` `-auto` `-ljemalloc` `-L/usr/local/jemalloc64-5.0.1/lib`

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#### Peak Compiler Invocation

**C benchmarks:**
- icx

**C++ benchmarks:**
- icpx

(Continued on next page)
Peak Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
521.wrf_r: ifort icc
527.cam4_r: ifort icx

Benchmarks using both C and C++:
511.povray_r: icpc icc
526.blender_r: icpx icx

Benchmarks using Fortran, C, and C++:
icpx icx ifort

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: -w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -flto
-Ofast -qopt-mem-layout-trans=4
-fimf-accuracy-bits=14:sqrt
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:
508.namd_r: basepeak = yes
510.parest_r: -w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops

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Peak Optimization Flags (Continued)

510.parest_r (continued):
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves_r: -w -m64 -Wl,-z,muldefs -xCORE-AVX512 -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
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

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-AVX512 -O3
-ipo -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3
-ipo -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: basepeak = yes
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Test Sponsor: HPE  
Tested by: HPE

Test Date: Jun-2021  
Hardware Availability: Jun-2021  
Software Availability: Dec-2020

You can also download the XML flags sources by saving the following links:  
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.0-ICX-revE.xml  
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml

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