### SPEC CPU®2017 Floating Point Rate Result

**Hewlett Packard Enterprise**  
ProLiant DL360 Gen10 Plus  
(2.10 GHz, Intel Xeon Platinum 8352V)

<table>
<thead>
<tr>
<th>Test Sponsor:</th>
<th>HPE</th>
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<tr>
<td>Hardware Availability:</td>
<td>Jun-2021</td>
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<td>Software Availability:</td>
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**SPECrater®2017_fp_base = 396**  
**SPECrater®2017_fp_peak = 420**

<table>
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<td>Jun-2021</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Dec-2020</td>
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</tbody>
</table>

#### Hardware

- **CPU Name:** Intel Xeon Platinum 8352V
- **Max MHz:** 3500
- **Nominal:** 2100
- **Enabled:** 72 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:** 54 MB I+D on chip per chip
- **Other:** None
- **Memory:** 2 TB (32 x 64 GB 2Rx4 PC4-3200AA-R, running at 2933)
- **Storage:** 1 x 400 GB SAS SSD, RAID 0
- **Other:** None

#### Software

- **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;  
  C/C++: Version 2021.1 of Intel C/C++ Compiler  
  Classic Build 20201112 for Linux
- **Parallel:** No
- **Firmware:** HPE BIOS Version U46 v1.42 05/16/2021 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

(Continued on next page)
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## Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL360 Gen10 Plus

(2.10 GHz, Intel Xeon Platinum 8352V)

---

### CPU2017 License:

3

---

### Test Sponsor:

HPE

---

### Tested by:

HPE

---

### Specrate

- **SPECrate®2017_fp_base = 396**
- **SPECrate®2017_fp_peak = 420**

---

### Results Table

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<td>641</td>
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</tbody>
</table>

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### 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_1.1.8/lib/intel64:/home/cpu2017_1.1.8/je5.0.1-64"

MALLOCONF = "retain:true"
```

---

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
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Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL360 Gen10 Plus  
(2.10 GHz, Intel Xeon Platinum 8352V)

**SPECrate®2017_fp_base = 396**  
**SPECrate®2017_fp_peak = 420**

**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 Aug 2 07:58:46 EDT 2021  
Submission: cpu2017-20210802-28527.sub

**Platform Notes**

The system ROM used for this result contains Intel microcode version 0xd0002a0 for  
the Intel Xeon Platinum 8352V 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_1.1.8/bin/sysinfo  
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aca64d  
running on localhost.localdomain Fri Jul 16 10:39:11 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 8352V CPU @ 2.10GHz

(Continued on next page)
Hewlett Packard Enterprise
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ProLiant DL360 Gen10 Plus
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SPECrate®2017_fp_base = 396
SPECrate®2017_fp_peak = 420

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

Platform Notes (Continued)

2 "physical id"s (chips)
144 "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 : 36
siblings : 72
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 32 33 34 35
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 32 33 34 35

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): 144
On-line CPU(s) list: 0-143
Thread(s) per core: 2
Core(s) per socket: 36
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Platinum 8352V CPU @ 2.10GHz
Stepping: 6
CPU MHz: 1693.451
BogoMIPS: 4200.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 55296K
NUMA node0 CPU(s): 0-17,72-89
NUMA node1 CPU(s): 18-35,90-107
NUMA node2 CPU(s): 36-53,108-125
NUMA node3 CPU(s): 54-71,126-143
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 aperfmperf pni pclmulqdq dtes64 monitor 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_l3 invpcid_single ssbd mba ibrs ibpb ibsp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd shani avx512bw avx512vl xsaveopt xsaves cqm_llc cqm_occup_llc cqm_mbm_total

(Continued on next page)
Hewlett Packard Enterprise
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SPECrate®2017_fp_base = 396
SPECrate®2017_fp_peak = 420

Platform Notes (Continued)

cqm_mbm_local split_lock_detect wbnoinvd dtherm ida arat pln pts avx512vbmi umip pku
ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
avx512_vpopcntdq la57 rdpid md_clear pconfig flush_l1d arch_capabilities

/proc/cpuinfo cache data
  cache size : 55296 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 16 17 72 73 74 75 76 77 78 79 80 81
  82 83 84 85 86 87 88 89
  node 0 size: 502337 MB
  node 0 free: 515371 MB
  node 1 cpus: 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 90 91 92 93 94 95 96
  97 98 99 100 101 102 103 104 105 106 107
  node 1 size: 502511 MB
  node 1 free: 515731 MB
  node 2 cpus: 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 108 109 110 111 112
  113 114 115 116 117 118 119 120 121 122 123 124 125
  node 2 size: 502385 MB
  node 2 free: 515405 MB
  node 3 cpus: 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 126 127 128 129 130
  131 132 133 134 135 136 137 138 139 140 141 142 143
  node 3 size: 502122 MB
  node 3 free: 515738 MB
  node distances:
    node 0 1 2 3
    0: 10 20 30 30
    1: 20 10 30 30
    2: 30 30 10 20
    3: 30 30 20 10

From /proc/meminfo
  MemTotal:       2113468776 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)
### Platform Notes (Continued)

```plaintext
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/swapgs 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 Jul 16 10:38

SPEC is set to: /home/cpu2017_1.1.8
    Filesystem Type Size Used Avail Use% Mounted on
    /dev/mapper/rhel00-home xfs 372G 234G 138G 63% /home

From /sys/devices/virtual/dmi/id
    Vendor: HPE
    Product: ProLiant DL360 Gen10 Plus
    Product Family: ProLiant
    Serial: CN701108CQ
```

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, configured at 2933

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

BIOS:
BIOS Vendor: HPE
BIOS Version: U46
BIOS Date: 05/16/2021
BIOS Revision: 1.42
Firmware Revision: 2.42

(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.
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,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

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

Compiler Version Notes (Continued)

Intel (R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
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==============================================================================
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
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Intel (R) C Intel (R) 64 Compiler Classic for applications running on Intel (R)
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==============================================================================
C++, C          | 511.povray_r(base) 526.blender_r(base, 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
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==============================================================================
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
==============================================================================

Intel (R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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Intel (R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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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.

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

(Continued on next page)
## Compiler Version Notes (Continued)

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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. |

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| 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 |
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| 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. |

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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. |

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| 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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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

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:
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-fflto -mfpmath=sse -funroll-loops -gopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```
hewlett Packard enterprise
proliant dl360 gen10 plus
(2.10 GHz, Intel Xeon Platinum 8352V)

SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

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

SPECrate®2017_fp_base = 396
SPECrate®2017_fp_peak = 420

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

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

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

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**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

(Continued on next page)
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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.0-ICX-revE.html
<table>
<thead>
<tr>
<th>Spec CPU®2017 Floating Point Rate Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hewlett Packard Enterprise</strong></td>
</tr>
<tr>
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<tr>
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</tr>
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</tr>
</tbody>
</table>

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

You can also download the XML flags sources by saving the following links:

- [HPE-Platform-Flags-Intel-V1.0-ICX-revE.xml](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-Intel-V1.0-ICX-revE.xml)
- [Intel-ic2021-official-linux64_revA.xml](http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.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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