## SPEC CPU®2017 Integer Speed Result

### Hewlett Packard Enterprise

*(Test Sponsor: HPE)*

**ProLiant DL385 Gen10 Plus**  
*(2.00 GHz, AMD EPYC 7663)*

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**SPECspeed®2017_int_base = 11.6**

**SPECspeed®2017_int_peak = 11.6**

### Hardware

| Test Date: | Apr-2021 |
| Hardware Availability: | Apr-2021 |
| Software Availability: | Mar-2021 |

| Test Sponsor: | HPE |
| Tested by: | HPE |

| Software Availability: | Mar-2021 |

**CPU2017 License: 3**

**Test Date:** Apr-2021  
**Hardware Availability:** Apr-2021  
**Software Availability:** Mar-2021

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**SPECspeed®2017_int_base (11.6)**  
**SPECspeed®2017_int_peak (11.6)**

### Software

**OS:** Ubuntu 20.04.1 LTS (x86_64)

**Compiler:** C/C++/Fortran: Version 3.0.0 of AOCC

**Parallel:** Yes

**Firmware:** HPE BIOS Version A42 v2.40 02/15/2021 released Feb-2021

**File System:** ext4

**System State:** Run level 5 (multi-user)

**Base Pointers:** 64-bit

**Peak Pointers:** 64-bit

**Other:** jemalloc: jemalloc memory allocator library v5.1.0

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

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**CPU Name:** AMD EPYC 7663

**Max MHz:** 3500

**Nominal:** 2000

**Enabled:** 112 cores, 2 chips

**Orderable:** 1,2 chip(s)

**Cache L1:** 32 KB I + 32 KB D on chip per core

**L2:** 512 KB I+D on chip per core

**L3:** 256 MB I+D on chip per chip, 32 MB shared / 7 cores

**Other:** None

**Memory:** 2 TB (16 x 128 GB 4Rx4 PC4-3200AA-L)

**Storage:** 1 x 182 GB SATA SSD, RAID 0

**Other:** None
Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL385 Gen10 Plus  
(2.00 GHz, AMD EPYC 7663)  

SPEC®2017_int_base = 11.6  
SPECspeed®2017_int_peak = 11.6

**Results Table**

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</table>

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

**Compiler Notes**

The AMD64 AOCC Compiler Suite is available at http://developer.amd.com/amd-aocc/

**Submit Notes**

The config file option 'submit' was used.  
'numactl' was used to bind copies to the cores.  
See the configuration file for details.

**Operating System Notes**

'ulimit -s unlimited' was used to set environment stack size  
'ulimit -l 2097152' was used to set environment locked pages in memory limit  
runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <etc>

'echo 8 > /proc/sys/vm/dirty_ratio' run as root to limit dirty cache to 8% of memory.  
'echo 1 > /proc/sys/vm/swappiness' run as root to limit swap usage to minimum necessary.  
'echo 1 > /proc/sys/vm/zone_reclaim_mode' run as root to free node-local memory and avoid remote memory usage.  
'sync; echo 3 > /proc/sys/vm/drop_caches' run as root to reset filesystem caches.  
'sysctl -w kernel.randomize_va_space=0' run as root to disable address space layout randomization (ASLR) to reduce run-to-run variability.

(Continued on next page)
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Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
(2.00 GHz, AMD EPYC 7663)

SPECspeed®2017_int_base = 11.6
SPECspeed®2017_int_peak = 11.6

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<th>Specification</th>
<th>Value</th>
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</tr>
<tr>
<td>Software Availability</td>
<td>Mar-2021</td>
</tr>
</tbody>
</table>

Operating System Notes (Continued)

'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root to enable
Transparent Hugepages (THP) for this run.
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root for peak
runs of 628.pop2_s and 638.imagick_s to enable THP only on request.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-111"
LD_LIBRARY_PATH =
"/home/cpu2017_B1/amd_speed_aocc300_milan_B_lib/64;/home/cpu2017_B1/amd_speed_aocc300_milan_B_lib/32;"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "112"

Environment variables set by runcpu during the 620.omnetpp_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-111"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 7742 CPU + 1TiB Memory using openSUSE 15.2

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: configured and built with GCC v4.8.2 in RHEL 7.4
jemalloc 5.1.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2

Submitted by: "Bhatnagar, Prateek" <prateek.bhatnagar@hpe.com>
Submitted: Mon May 24 12:49:23 EDT 2021
Submission: cpu2017-20210524-26467.sub
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
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SPECspeed®2017_int_base = 11.6
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CPU2017 License: 3
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Tested by: HPE

Test Date: Apr-2021
Hardware Availability: Apr-2021
Software Availability: Mar-2021

Platform Notes

BIOS Configuration
Workload Profile set to General Peak Frequency Compute
AMD SMT Option set to Disabled
Determinism Control set to Manual
   Performance Determinism set to Power Deterministic
Last-Level Cache (LLC) as NUMA Node set to Enabled
NUMA memory domains per socket set to One memory domain per socket
Thermal Configuration set to Maximum Cooling
Workload Profile set to Custom
Infinity Fabric Power Management set to Disabled
Infinity Fabric Performance State set to P0
Power Regulator set to OS Control Mode

Sysinfo program /home/cpu2017_B1/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on dl385g10v2 Wed Apr  1 12:26:24 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 : AMD EPYC 7663 56-Core Processor
   2 "physical id"s (chips)
   112 "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 : 56
siblings : 56
physical 0: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
   28 29 30 32 33 34 35 36 37 38 40 41 42 43 44 45 46 48 49 50 51 52 53 54 56 57 58 59
   60 61 62
physical 1: cores 0 1 2 3 4 5 6 8 9 10 11 12 13 14 16 17 18 19 20 21 22 24 25 26 27
   28 29 30 32 33 34 35 36 37 38 40 41 42 43 44 45 46 48 49 50 51 52 53 54 56 57 58 59
   60 61 62

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 48 bits physical, 48 bits virtual
CPU(s): 112
On-line CPU(s) list: 0-111
Thread(s) per core: 1
Core(s) per socket: 56
Socket(s): 2
NUMA node(s): 16

(Continued on next page)
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ProLiant DL385 Gen10 Plus  
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<td>HPE</td>
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</table>

**SPECspeed®2017_int_base = 11.6**  
**SPECspeed®2017_int_peak = 11.6**

**Platform Notes (Continued)**

- **Vendor ID:** AuthenticAMD
- **CPU family:** 25
- **Model:** 1
- **Model name:** AMD EPYC 7663 56-Core Processor
- **Stepping:** 1
- **Frequency boost:** enabled
- **CPU MHz:** 1796.447
- **CPU max MHz:** 2000.0000
- **CPU min MHz:** 1500.0000
- **BogoMIPS:** 3992.45
- **Virtualization:** AMD-V
- **L1d cache:** 3.5 MiB
- **L1i cache:** 3.5 MiB
- **L2 cache:** 56 MiB
- **L3 cache:** 512 MiB
- **NUMA node0 CPU(s):** 0-6
- **NUMA node1 CPU(s):** 7-13
- **NUMA node2 CPU(s):** 14-20
- **NUMA node3 CPU(s):** 21-27
- **NUMA node4 CPU(s):** 28-34
- **NUMA node5 CPU(s):** 35-41
- **NUMA node6 CPU(s):** 42-48
- **NUMA node7 CPU(s):** 49-55
- **NUMA node8 CPU(s):** 56-62
- **NUMA node9 CPU(s):** 63-69
- **NUMA node10 CPU(s):** 70-76
- **NUMA node11 CPU(s):** 77-83
- **NUMA node12 CPU(s):** 84-90
- **NUMA node13 CPU(s):** 91-97
- **NUMA node14 CPU(s):** 98-104
- **NUMA node15 CPU(s):** 105-111
- **Vulnerability Itlb multihit:** Not affected
- **Vulnerability L1tf:** Not affected
- **Vulnerability Mds:** Not affected
- **Vulnerability Meltdown:** Not affected
- **Vulnerability Spec store bypass:** Mitigation; Speculative Store Bypass disabled via prctl and seccomp
- **Vulnerability Spectre v1:** Mitigation; userscopy/swapgs barriers and __user pointer sanitization
- **Vulnerability Spectre v2:** Mitigation; Full AMD retpoline, IBPB conditional, IBRS_FW, STIBP disabled, RSB filling
- **Vulnerability Srbsds:** Not affected
- **Vulnerability Tsx async abort:** Not affected

**Flags:**  
-fpu vme de pse tsc msr pae mce cx8 apic sep mtrr  
pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt  
pdpeslgb rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid  
aperfmperf pni pclmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2 movbe popcnt aes

(Continued on next page)
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Test Date: Apr-2021
Hardware Availability: Apr-2021
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Platform Notes (Continued)

xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a
misalignsse 3dnowprefetch osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb
bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs
ibpb stibp vmmcall fsgsbase bm11 avx2 smp m12 invpcid cqm rdt_a rdseed adx smap
clfushopt clwb sha ni xsaveopt xsave xsavec xgetbv1 xsavees cqm_llc cqm_occup_llc
cqm_mbm_total cqm_mbm_local clzero irperf xsaveerptr wboinvd arat npt lbv svm_lock
nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pfthreshold
v_vmsave_vmload vgic umip pku ospke vaes vpclmulqdq rdpid overflow_recov succor smca

/proc/cpuinfo cache data
  cache size : 512 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
  physical chip.
  available: 16 nodes (0-15)
  node 0 cpus: 0 1 2 3 4 5 6
  node 0 size: 128775 MB
  node 0 free: 128524 MB
  node 1 cpus: 7 8 9 10 11 12 13
  node 1 size: 129022 MB
  node 1 free: 128850 MB
  node 2 cpus: 14 15 16 17 18 19 20
  node 2 size: 129022 MB
  node 2 free: 128918 MB
  node 3 cpus: 21 22 23 24 25 26 27
  node 3 size: 129022 MB
  node 3 free: 128893 MB
  node 4 cpus: 28 29 30 31 32 33 34
  node 4 size: 129022 MB
  node 4 free: 128927 MB
  node 5 cpus: 35 36 37 38 39 40 41
  node 5 size: 129022 MB
  node 5 free: 128845 MB
  node 6 cpus: 42 43 44 45 46 47 48
  node 6 size: 129022 MB
  node 6 free: 128924 MB
  node 7 cpus: 49 50 51 52 53 54 55
  node 7 size: 116909 MB
  node 7 free: 116799 MB
  node 8 cpus: 56 57 58 59 60 61 62
  node 8 size: 129022 MB
  node 8 free: 128922 MB
  node 9 cpus: 63 64 65 66 67 68 69
  node 9 size: 128998 MB
  node 9 free: 128889 MB
  node 10 cpus: 70 71 72 73 74 75 76
  node 10 size: 129022 MB

(Continued on next page)
Hewlett Packard Enterprise
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ProLiant DL385 Gen10 Plus
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SPECspeed®2017_int_base = 11.6
SPECspeed®2017_int_peak = 11.6

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

Platform Notes (Continued)

node 10 free: 128912 MB
node 11 cpus: 77 78 79 80 81 82 83
node 11 size: 129022 MB
node 11 free: 128920 MB
node 12 cpus: 84 85 86 87 88 89 90
node 12 size: 129022 MB
node 12 free: 128812 MB
node 13 cpus: 91 92 93 94 95 96 97
node 13 size: 129022 MB
node 13 free: 128819 MB
node 14 cpus: 98 99 100 101 102 103 104
node 14 size: 129022 MB
node 14 free: 128859 MB
node 15 cpus: 105 106 107 108 110 111
node 15 size: 129017 MB
node 15 free: 128902 MB
node distances:

From /proc/meminfo
MemTotal: 2101215208 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
/sbin/tuned-adm active
Current active profile: throughput-performance
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance
/usr/bin/lsb_release -d

(Continued on next page)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
(2.00 GHz, AMD EPYC 7663)

SPECspeed®2017_int_base = 11.6
SPECspeed®2017_int_peak = 11.6

Ubuntu 20.04.1 LTS

From /etc/*release* /etc/*version*
debian_version: bullseye/sid
os-release:
   NAME="Ubuntu"
   VERSION="20.04.1 LTS (Focal Fossa)"
   ID=ubuntu
   ID_LIKE=debian
   PRETTY_NAME="Ubuntu 20.04.1 LTS"
   VERSION_ID="20.04"
   HOME_URL="https://www.ubuntu.com/"
   SUPPORT_URL="https://help.ubuntu.com/"

uname -a:
   Linux dl385g10v2 5.4.0-42-generic #46-Ubuntu SMP Fri Jul 10 00:24:02 UTC 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/swapsgs
   barriers and __user pointer
   sanitization
CVE-2017-5753 (Spectre variant 1):
   Mitigation: Full AMD retpoline,
   IBPB: conditional, IBRS_FW, STIBP:
   disabled, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 5 Apr 1 12:23

SPEC is set to: /home/cpu2017_B1
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/ubuntu--vg-ubuntu--lv ext4 182G 67G 106G 39% /

From /sys/devices/virtual/dmi/id
Vendor: HPE
Product: ProLiant DL385 Gen10 Plus
Product Family: ProLiant
Serial: CN79340HC3
SPEC CPU®2017 Integer Speed Result
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Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL385 Gen10 Plus
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SPECspeed®2017_int_base = 11.6
SPECspeed®2017_int_peak = 11.6

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

Platform Notes (Continued)

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:
16x UNKNOWN M386AAG40AM3-CWE 128 GB 4 rank 3200
16x UNKNOWN NOT AVAILABLE

BIOS:
BIOS Vendor: HPE
BIOS Version: A42
BIOS Date: 02/15/2021
BIOS Revision: 2.40
Firmware Revision: 2.40

(End of data from sysinfo program)

Compiler Version Notes

C
| 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak) 657.xz_s(base, peak)

AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin

C++
| 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak)
| 631.deepsjeng_s(base, peak) 641.leela_s(base, peak)

AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin

Fortran
| 648.exchange2_s(base, peak)

AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on

(Continued on next page)
Hewlett Packard Enterprise
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SPECspeed®2017_int_base = 11.6
SPECspeed®2017_int_peak = 11.6

Compiler Version Notes (Continued)

LLVM Mirror-Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin

Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Base Portability Flags

600.perlbench_s: -DSPEC_LINUX_X64 -DSPEC_LP64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LINUX -DSPEC_LP64
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mlivm -Wl,-enable-licm-vrp -Wl,-mlivm -Wl,-region-vectorize
-Wl,-mlivm -Wl,-function-specialize
-Wl,-mlivm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mlivm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mlivm -unroll-threshold=50 -mlivm -inline-threshold=1000
-fremap-arrays -mlivm -function-specialize -flv-function-specialization

(Continued on next page)
## Base Optimization Flags (Continued)

C benchmarks:
- `mllvm -enable-gvn-hoist`  
- `mllvm -global-vectorize-slp=true`  
- `mllvm -reduce-array-computations=3 -z muldefs`  
- `DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc`  
- `-lflang -lflangrti`

C++ benchmarks:
- `-m64 -std=c++98 -mno-adx -mno-sse4a`  
- `-Wl,-mllvm -Wl,-do-block-reorder=aggressive`  
- `-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize`  
- `-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6`  
- `-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3`  
- `-fveclib=AMDLIBM -ffast-math -flto -mllvm -enable-partial-unswitch`  
- `-mllvm -unroll-threshold=100 -finline-aggressive`  
- `-flv-function-specialization -mllvm -loop-unswitch=threshold=200000`  
- `-mllvm -reroil-loops -mllvm -aggressive-loop-unsich`  
- `-mllvm -extra-vectorizer-passes -mllvm -reduce-array-computations=3`  
- `-mllvm -global-vectorize-slp=true -mllvm -convert-pow-exp-to-int=false`  
- `-z muldefs -mllvm -do-block-reorder=aggressive`  
- `-fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP`  
- `-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang`  
- `-lflangrti`

Fortran benchmarks:
- `-m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-inline-recursion=4`  
- `-Wl,-mllvm -Wl,-sr-in-nested-loop -Wl,-mllvm -Wl,-enable-iv-split`  
- `-Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize`  
- `-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6`  
- `-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3`  
- `-fveclib=AMDLIBM -ffast-math -flto -z muldefs`  
- `-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -DSPEC_OPENMP`  
- `-fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang`  
- `-lflangrti`

## Base Other Flags

C benchmarks:
- `-Wno-unused-command-line-argument -Wno-return-type`

C++ benchmarks:
- `-Wno-unused-command-line-argument -Wno-return-type`

Fortran benchmarks:
- `-Wno-return-type`
SPEC CPU®2017 Integer Speed Result

Hewlett Packard Enterprise
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ProLiant DL385 Gen10 Plus
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SPECspeed®2017_int_base = 11.6
SPECspeed®2017_int_peak = 11.6

CPU2017 License: 3
Test Sponsor: HPE
Test Date: Apr-2021
Tested by: HPE
Hardware Availability: Apr-2021
Software Availability: Mar-2021

Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

600.perlbench_s: basepeak = yes
602.gcc_s: basepeak = yes
605.mcf_s: basepeak = yes
625.x264_s: basepeak = yes
657.xz_s: -m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mlllvm -Wl,-enable-licm-vrp
-Wl,-mlllvm -Wl,-function-specialize
-Wl,-mlllvm -Wl,-align-all-no fallback-blocks=6
-Wl,-mlllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fvecopt=AMDLIBM -ffast-math -finto
-fstruct-layout=5 -mlllvm -unroll-threshold=50
-fremap-arrays -flv-function-specialization
-mlllvm -inline-threshold=1000 -mlllvm -enable-gvn-merge
-mlllvm -global-vectorize-slp=true
-mlllvm -function-specialize -mlllvm -enable-licm-vrp
-mlllvm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lamlib -ljemalloc -lflang

C++ benchmarks:

(Continued on next page)
SPEC CPU®2017 Integer Speed Result

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

Test Date: Apr-2021
Hardware Availability: Apr-2021
Software Availability: Mar-2021

Peak Optimization Flags (Continued)

620.omnetpp_s: -m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mlllvm -Wl,-do-block-reorder=aggressive
-Wl,-mlllvm -Wl,-function-specialize
-Wl,-mlllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mlllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-finline-aggressive -mlllvm -unroll-threshold=100
-flv-function-specialization -mlllvm -enable-licm-vrp
-mlllvm -reroll-loops -mlllvm -aggressive-loop-unswitch
-mlllvm -reduce-array-computations=3
-mlllvm -global-vectorize-slp=true
-mlllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-ljemalloc -lflang

623.xalancbmk_s: basepeak = yes
631.deepsjeng_s: basepeak = yes
641.leela_s: basepeak = yes

Fortran benchmarks:
648.exchange2_s: basepeak = yes

Peak Other Flags

C benchmarks:
-Wno-unused-command-line-argument -Wno-return-type

C++ benchmarks:
-Wno-unused-command-line-argument -Wno-return-type

Fortran benchmarks:
-Wno-return-type

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revP.html
SPEC CPU®2017 Integer Speed Result

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Test Date: Apr-2021
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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/HPE-Platform-Flags--AMD--V1.2--EPYC-revP.xml

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