# SPEC CPU®2017 Integer Speed Result

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL365 Gen10 Plus  
(2.45 GHz, AMD EPYC 7763)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
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### CPU2017 License: 3  
Test Sponsor: HPE  
Tested by: HPE  

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**SPECspeed®2017_int_base (11.1)**  
**SPECspeed®2017_int_peak (11.1)**

### Hardware

**CPU Name:** AMD EPYC 7763  
**Max MHz:** 3500  
**Nominal:** 2450  
**Enabled:** 128 cores, 2 chips  
**Orderable:** 1, 2 chips  
**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 core, 32 MB shared / 8 cores  
**Other:** None  
**Memory:** 2 TB (16 x 128 GB 4Rx4 PC4-3200AA-L)  
**Storage:** 1 x 196 GB SATA SSD, RAID 0  
**Other:** None

### Software

**OS:** Ubuntu 20.04.1 LTS (x86_64)  
**Kernel:** 5.4.0-56-generic  
**Compiler:** C/C++/Fortran: Version 3.0.0 of AOCC  
**Parallel:** Yes  
**Firmware:** HPE BIOS Version A42 v2.40 02/23/2021 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
Results Table

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SPECspeed®2017_int_base = 11.1
SPECspeed®2017_int_peak = 11.1

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)
## 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 = "0-127"
- LD_LIBRARY_PATH = "/home/cpu2017n/amd_speed_aocc300_milan_B_lib/64;/home/cpu2017n/amd_speed_aocc300_milan_B_lib/32;"
- MALLOC_CONF = "retain:true"
- OMP_DYNAMIC = "false"
- OMP_SCHEDULE = "static"
- OMP_STACKSIZE = "128M"
- OMP_THREAD_LIMIT = "128"

Environment variables set by runcpu during the 657.xz_s peak run:
- GOMP_CPU_AFFINITY = "0-127"

## 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 (No options specified)
jemalloc 5.1.0 is available here: https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2

## 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
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SPECspeed®2017_int_base = 11.1
SPECspeed®2017_int_peak = 11.1

Platform Notes (Continued)

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/cpu2017n/bin/sysinfo
Rev: r6538 of 2020-09-24 e8664e66d2d7080af99a89d4b38e2f1c
running on admin Wed Apr 1 18:00:05 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 7763 64-Core Processor
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 : 64
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 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60 61 62 63
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 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60 61 62 63

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): 128
On-line CPU(s) list: 0-127
Thread(s) per core: 1
Core(s) per socket: 64
Socket(s): 2
NUMA node(s): 16
Vendor ID: AuthenticAMD
CPU family: 25
Model: 1
Model name: AMD EPYC 7763 64-Core Processor
Stepping: 1

(Continued on next page)
### Platform Notes (Continued)

- **Frequency boost:** enabled
- **CPU MHz:** 1796.525
- **CPU max MHz:** 2450.0000
- **CPU min MHz:** 1500.0000
- **BogoMIPS:** 4891.30
- **Virtualization:** AMD-V
- **L1d cache:** 4 MiB
- **L1i cache:** 4 MiB
- **L2 cache:** 64 MiB
- **L3 cache:** 512 MiB
- **NUMA node0 CPU(s):** 0-7
- **NUMA node1 CPU(s):** 8-15
- **NUMA node2 CPU(s):** 16-23
- **NUMA node3 CPU(s):** 24-31
- **NUMA node4 CPU(s):** 32-39
- **NUMA node5 CPU(s):** 40-47
- **NUMA node6 CPU(s):** 48-55
- **NUMA node7 CPU(s):** 56-63
- **NUMA node8 CPU(s):** 64-71
- **NUMA node9 CPU(s):** 72-79
- **NUMA node10 CPU(s):** 80-87
- **NUMA node11 CPU(s):** 88-95
- **NUMA node12 CPU(s):** 96-103
- **NUMA node13 CPU(s):** 104-111
- **NUMA node14 CPU(s):** 112-119
- **NUMA node15 CPU(s):** 120-127

**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; usercopy/swapgs barriers and __user pointer sanitization
**Vulnerability Spectre v2:** Mitigation; Full AMD retpoline, IBPB conditional, IBRs_FW, STIBP disabled, RSB filling
**Vulnerability Srbds:** Not affected
**Vulnerability Tsx async abort:** Not affected

**Flags:** fpu vme de pm mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperfmperf pni pclmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm ssse4 aarch64 misalignsse 3dnowprefetch osxvibs skinit wdt tce topoext perfctr_core perfctr_nb bpxext perfctr_llc mwaitx cpb cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep bmi2 invpcid cqm rdt_a rdseed adx smap clflushopt clwb sha_ni xsaveopt xsave cqm_llc cqm_occup_llc

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SPECspeed®2017_int_base = 11.1
SPECspeed®2017_int_peak = 11.1

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Tested by: HPE

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Platform Notes (Continued)

cqm_mbm_total cqm_mbm_local clzero irperf xsaveprptr wbnoinvd arat npt lbrv svm_lock
nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter pfthreshold
v_vmsave_vmload vgif 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 7
node 0 size: 128776 MB
node 0 free: 128624 MB
node 1 cpus: 8 9 10 11 12 13 14 15
node 1 size: 129022 MB
node 1 free: 128797 MB
node 2 cpus: 16 17 18 19 20 21 22 23
node 2 size: 129022 MB
node 2 free: 128878 MB
node 3 cpus: 24 25 26 27 28 29 30 31
node 3 size: 129022 MB
node 3 free: 128869 MB
node 4 cpus: 32 33 34 35 36 37 38 39
node 4 size: 129022 MB
node 4 free: 128905 MB
node 5 cpus: 40 41 42 43 44 45 46 47
node 5 size: 129022 MB
node 5 free: 128910 MB
node 6 cpus: 48 49 50 51 52 53 54 55
node 6 size: 129022 MB
node 6 free: 128917 MB
node 7 cpus: 56 57 58 59 60 61 62 63
node 7 size: 116909 MB
node 7 free: 116801 MB
node 8 cpus: 64 65 66 67 68 69 70 71
node 8 size: 129022 MB
node 8 free: 128893 MB
node 9 cpus: 72 73 74 75 76 77 78 79
node 9 size: 129022 MB
node 9 free: 128870 MB
node 10 cpus: 80 81 82 83 84 85 86 87
node 10 size: 129022 MB
node 10 free: 128928 MB
node 11 cpus: 88 89 90 91 92 93 94 95
node 11 size: 129022 MB
node 11 free: 128915 MB
node 12 cpus: 96 97 98 99 100 101 102 103

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

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

Platform Notes (Continued)

node 12 size: 128997 MB
node 12 free: 128878 MB
node 13 cpus: 104 105 106 107 108 109 110 111
node 13 size: 129022 MB
node 13 free: 128910 MB
node 14 cpus: 112 113 114 115 116 117 118 119
node 14 size: 129022 MB
node 14 free: 128895 MB
node 15 cpus: 120 121 122 123 124 125 126 127
node 15 size: 129016 MB
node 15 free: 128907 MB
node distances:

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<td>11</td>
</tr>
</tbody>
</table>

From /proc/meminfo
MemTotal: 2101212488 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/sbin/tuned-adm active
Current active profile: balanced

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

/usr/bin/lsb_release -d
Ubuntu 20.04.1 LTS

From /etc/*release* /etc/*version*
debian_version: bullseye/sid
os-release:

(Continued on next page)
Platform Notes (Continued)

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 admin 5.4.0-56-generic #62-Ubuntu SMP Mon Nov 23 19:20:19 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): Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store Bypass disabled via prctl and seccomp

CVE-2017-5753 (Spectre variant 1):
Mitigation: usercopy/swapgs barriers and __user pointer sanitization

CVE-2017-5715 (Spectre variant 2):
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 17:24

SPEC is set to: /home/cpu2017n

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>/dev/mapper/ubuntu--vg-ubuntu--lv</td>
<td>ext4</td>
<td>196G</td>
<td>50G</td>
<td>137G</td>
<td>27%</td>
<td>/</td>
</tr>
</tbody>
</table>

From /sys/devices/virtual/dmi/id
Vendor: HPE
Product: ProLiant DL365 Gen10 Plus
Product Family: ProLiant
Serial: CN70430NKR

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.

(Continued on next page)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL365 Gen10 Plus
(2.45 GHz, AMD EPYC 7763)

SPEC CPU®2017 Integer Speed Result

SPECspeed®2017_int_base = 11.1
SPECspeed®2017_int_peak = 11.1

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

Platform Notes (Continued)

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

BIOS:
BIOS Vendor: HPE
BIOS Version: A42
BIOS Date: 02/23/2021
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 LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
SPEC CPU®2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL365 Gen10 Plus
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SPECspeed®2017_int_base = 11.1
SPECspeed®2017_int_peak = 11.1

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

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

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,-mlvm -Wl,-enable-licm-vrp -Wl,-mlvm -Wl,-region-vectorize
-Wl,-mlvm -Wl,-function-specialize
-Wl,-mlvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mlvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mlvm -unroll-threshold=50 -mlvm -inline-threshold=1000
-fremap-arrays -mlvm -function-specialize -flv-function-specialization
-mlvm -enable-gvn-hoist -mlvm -global-vectorize-slp=true
-mlvm -enable-licm-vrp -mlvm -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,-mlvm -Wl,-do-block-reorder=aggressive
-Wl,-mlvm -Wl,-region-vectorize -Wl,-mlvm -Wl,-function-specialize

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

C++ benchmarks (continued):
- W1, -mlllvm -W1, -align-all-nofallthru-blocks=6
- W1, -mlllvm -W1, -reduce-array-computations=3 -O3 -march=znver3
- fvecclib=AMDLIBM -ffast-math -flto -mlllvm -enable-partial-unswitch
- mlllvm -unroll-threshold=100 -finline-aggressive
- fllvm-function-specialization -mlllvm -loop-unswitch-threshold=200000
- mlllvm -reroll-loops -mlllvm -aggressive-loop-unswitch
- mlllvm -extra-vectorizer-passes -mlllvm -reduce-array-computations=3
- mlllvm -global-vectorize-slp=true -mlllvm -convert-pow-exp-to-int=false
- z muldefs -mlllvm -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 -W1, -mlllvm -W1, -inline-recursion=4
- W1, -mlllvm -W1, -lsr-in-nested-loop -W1, -mlllvm -W1, -enable-iv-split
- W1, -mlllvm -W1, -region-vectorize -W1, -mlllvm -W1, -function-specialize
- W1, -mlllvm -W1, -align-all-nofallthru-blocks=6
- W1, -mlllvm -W1, -reduce-array-computations=3 -O3 -march=znver3
- fvecclib=AMDLIBM -ffast-math -flto -z muldefs
- mlllvm -unroll-aggressive -mlllvm -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

Peak Compiler Invocation

C benchmarks:
clang
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL365 Gen10 Plus
(2.45 GHz, AMD EPYC 7763)

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

SPECspeed®2017_int_base = 11.1
SPECspeed®2017_int_peak = 11.1

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

Peak Compiler Invocation (Continued)

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-nofallthru-blocks=6
-Wl,-mlllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=5 -mlllvm -unroll-threshold=50
-fremap-arrays -fly-function-specialization
-mlllvm -inline-threshold=1000 -mlllvm -enable-gvn-hoist
-mlllvm -global-vectorize-slp=true
-mlllvm -function-specialize -mlllvm -enable-licm-vrp
-mlllvm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

C++ benchmarks:
620.omnetpp_s: basepeak = yes
623.xalancbmk_s: basepeak = yes

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

**Hewlett Packard Enterprise**  
(Test Sponsor: HPE)  
ProLiant DL365 Gen10 Plus  
(2.45 GHz, AMD EPYC 7763)

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</tr>
<tr>
<td>Tested by: HPE</td>
<td>Software Availability: Mar-2021</td>
</tr>
</tbody>
</table>

#### Peak Optimization Flags (Continued)

- 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:


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](http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revP.xml)

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