SPEC CPU®2017 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL365 Gen10 Plus
(3.0 GHz, AMD EPYC 7313)

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>HPE</td>
</tr>
<tr>
<td>Tested by:</td>
<td>HPE</td>
</tr>
<tr>
<td>Test Date:</td>
<td>Mar-2021</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>Apr-2021</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Mar-2021</td>
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<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>32</td>
<td>6.57</td>
<td>6.57</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>32</td>
<td>13.5</td>
<td>13.5</td>
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<tr>
<td>605.mcf_s</td>
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<td>8.72</td>
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<tr>
<td>620.omnetpp_s</td>
<td>32</td>
<td>14.3</td>
<td>14.3</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>32</td>
<td>20.8</td>
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<tr>
<td>625.x264_s</td>
<td>32</td>
<td>17.3</td>
<td>17.3</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>32</td>
<td>6.42</td>
<td>6.42</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>32</td>
<td>5.83</td>
<td>5.83</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>32</td>
<td>23.5</td>
<td>23.5</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>32</td>
<td>25.0</td>
<td>25.1</td>
</tr>
</tbody>
</table>

--- SPECspeed®2017_int_base (12.4) --- SPECspeed®2017_int_peak (12.4)

**Hardware**

- **CPU Name:** AMD EPYC 7313
- **Max MHz:** 3700
- **Nominal:** 3000
- **Enabled:** 32 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:** 128 MB I+D on chip per chip, 32 MB shared / 4 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
Hewlett Packard Enterprise  
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ProLiant DL365 Gen10 Plus  
(3.0 GHz, AMD EPYC 7313)  

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>605.mcf_s</td>
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<td>625.x264_s</td>
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<tr>
<td>631.deepsjeng_s</td>
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<td>641.leela_s</td>
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<td>5.83</td>
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<td>5.83</td>
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<tr>
<td>648.exchange2_s</td>
<td>32</td>
<td>125</td>
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<td>124</td>
<td>23.6</td>
<td>125</td>
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<tr>
<td>657.xz_s</td>
<td>32</td>
<td>247</td>
<td>25.0</td>
<td>247</td>
<td>25.1</td>
<td>248</td>
<td>25.0</td>
</tr>
</tbody>
</table>

**Compiler Notes**

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

**Submit Notes**

'tnumactl' 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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SPECspeed®2017_int_base = 12.4
SPECspeed®2017_int_peak = 12.4

CPU2017 License: 3
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Tested by: HPE

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 = "0-31"
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 = "32"

Environment variables set by runcpu during the 600.perlbench_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-31"

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
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<tr>
<td>12.4</td>
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Tested by: HPE

Test Date: Mar-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/cpu2017n/bin/sysinfo  
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c  
runtime on admin Wed Apr 1 18:24:58 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 7313 16-Core Processor  
  2 "physical id"s (chips)  
  32 "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 : 16  
siblings : 16  
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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): 32  
On-line CPU(s) list: 0-31  
Thread(s) per core: 1  
Core(s) per socket: 16  
Socket(s): 2  
NUMA node(s): 8  
Vendor ID: AuthenticAMD  
CPU family: 25  
Model: 1  
Model name: AMD EPYC 7313 16-Core Processor

(Continued on next page)
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Test Date: Mar-2021
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Platform Notes (Continued)

Stepping: 1
Frequency boost: enabled
CPU MHz: 3417.890
CPU max MHz: 3000.0000
CPU min MHz: 1500.0000
BogoMIPS: 5988.95
Virtualization: AMD-V
L1d cache: 1 MiB
L1i cache: 1 MiB
L2 cache: 16 MiB
L3 cache: 256 MiB
NUMA node0 CPU(s): 0-3
NUMA node1 CPU(s): 4-7
NUMA node2 CPU(s): 8-11
NUMA node3 CPU(s): 12-15
NUMA node4 CPU(s): 16-19
NUMA node5 CPU(s): 20-23
NUMA node6 CPU(s): 24-27
NUMA node7 CPU(s): 28-31
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, IBBP conditional, IBRS_FW, STIBP disabled, RSB filling
Vulnerability Srbds: 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
        pdelpgb 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
        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
        bprext perfctr_l1l mwaitx cpb cat_l3 cdpl_l3 invpcid_single hw_pstate ssbd mba ibrs
        ibpb stibp vmmcall fsqsgbase bmi1 avx2 smep bmi2 invpcid cmp rdt_a rdseed adx smap
        clflushopt clwb sha ni xsaveopt xsavec xgetbv1 xsaves cqm l1c cqm_occup_llc
        cqm_mbb_total cqm_mbb_local clzero ierperf xsaveerptr wboinvd arat npt lbv svm_lock
        nrip_save tsc_scale vmcb_clean flushbyasid decodeassis pfthreshold
        v_vmsave_vmload vgif umip pkp ospke vaes vpclmulqdq rdpid overflow_recov succor smca

/proc/cpuinfo cache data
  cache size: 512 KB
(Continued on next page)
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SPECspeed®2017_int_peak = 12.4

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<td>Tested by:</td>
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<td>HPE</td>
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</table>

Platform Notes (Continued)
From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a physical chip.
   available: 8 nodes (0-7)
   node 0 cpus: 0 1 2 3
   node 0 size: 257801 MB
   node 0 free: 257545 MB
   node 1 cpus: 4 5 6 7
   node 1 size: 258046 MB
   node 1 free: 257877 MB
   node 2 cpus: 8 9 10 11
   node 2 size: 258046 MB
   node 2 free: 257852 MB
   node 3 cpus: 12 13 14 15
   node 3 size: 245935 MB
   node 3 free: 245765 MB
   node 4 cpus: 16 17 18 19
   node 4 size: 258022 MB
   node 4 free: 257907 MB
   node 5 cpus: 20 21 22 23
   node 5 size: 258046 MB
   node 5 free: 257938 MB
   node 6 cpus: 24 25 26 27
   node 6 size: 258046 MB
   node 6 free: 257944 MB
   node 7 cpus: 28 29 30 31
   node 7 size: 258044 MB
   node 7 free: 257933 MB
   node distances:
   node 0 1 2 3 4 5 6 7
   0:  10 11 11 11 32 32 32 32
   1:  11 10 11 11 32 32 32 32
   2:  11 11 10 11 32 32 32 32
   3:  11 11 11 10 32 32 32 32
   4:  32 32 32 32 10 11 11 11
   5:  32 32 32 32 11 10 11 11
   6:  32 32 32 32 11 11 10 11
   7:  32 32 32 32 11 11 11 10

From /proc/meminfo
   MemTotal:       2101239756 kB
   HugePages_Total:       0
   Hugepagesize:       2048 kB
/sbin/tuned-adm active
   Current active profile: balanced
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has

(Continued on next page)
Platform Notes (Continued)

 performance

 /usr/bin/lsb_release -d
 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 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
 Filesystem Type Size Used Avail Use% Mounted on
 /dev/mapper/ubuntu--vg-ubuntu--lv ext4 196G 50G 137G 27% /

 From /sys/devices/virtual/dmi/id
 Vendor: HPE

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SPECspeed®2017_int_base = 12.4
SPECspeed®2017_int_peak = 12.4

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Tested by: HPE

Platform Notes (Continued)

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.

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

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

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

## 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 -W1,-allow-multiple-definition
-W1,-mlllvm -W1,-enable-licm-vrp -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

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Base Optimization Flags (Continued)

C benchmarks (continued):
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mlirv -unroll-threshold=50 -mlirvm -inline-threshold=1000
-freemaps -array -mlirv -function-specialize -flv-function-specialization
-mlirv -enable-gvn-hoist -mlirv -global-vectorize-slp=true
-mlirv -enable-licm-vrp -mlirv -reduce-array-computations=3 -z muldefs
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-lifang -lifangrti

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

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

Base Other Flags

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

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

(Continued on next page)
Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL365 Gen10 Plus
(3.0 GHz, AMD EPYC 7313)

SPEC CPU®2017 Integer Speed Result
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SPECspeed®2017_int_base = 12.4
SPECspeed®2017_int_peak = 12.4

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

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

Base Other Flags (Continued)

Fortran benchmarks:
-\texttt{Wno-return-type}

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: -m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition
-Wl,-mllvm -Wl,-enable-licm-vrp
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=5 -mllvm -unroll-threshold=50
-freemap-arrays -flv-function-specialization
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-mllvm -global-vectorize-slp=true
-mllvm -function-specialize -mllvm -enable-licm-vrp
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

602.gcc_s: basepeak = yes

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

Hewlett Packard Enterprise  
(Test Sponsor: HPE)  
ProLiant DL365 Gen10 Plus  
(3.0 GHz, AMD EPYC 7313)

SPECspeed®2017_int_base = 12.4  
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</table>

**Peak Optimization Flags (Continued)**

- 605.mcf_s: basepeak = yes
- 625.x264_s: basepeak = yes
- 657.xz_s: Same as 600.perlbench_s

**C++ benchmarks:**
- 620.omnetpp_s: basepeak = yes
- 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


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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