



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

## Hewlett Packard Enterprise

(Test Sponsor: HPE)

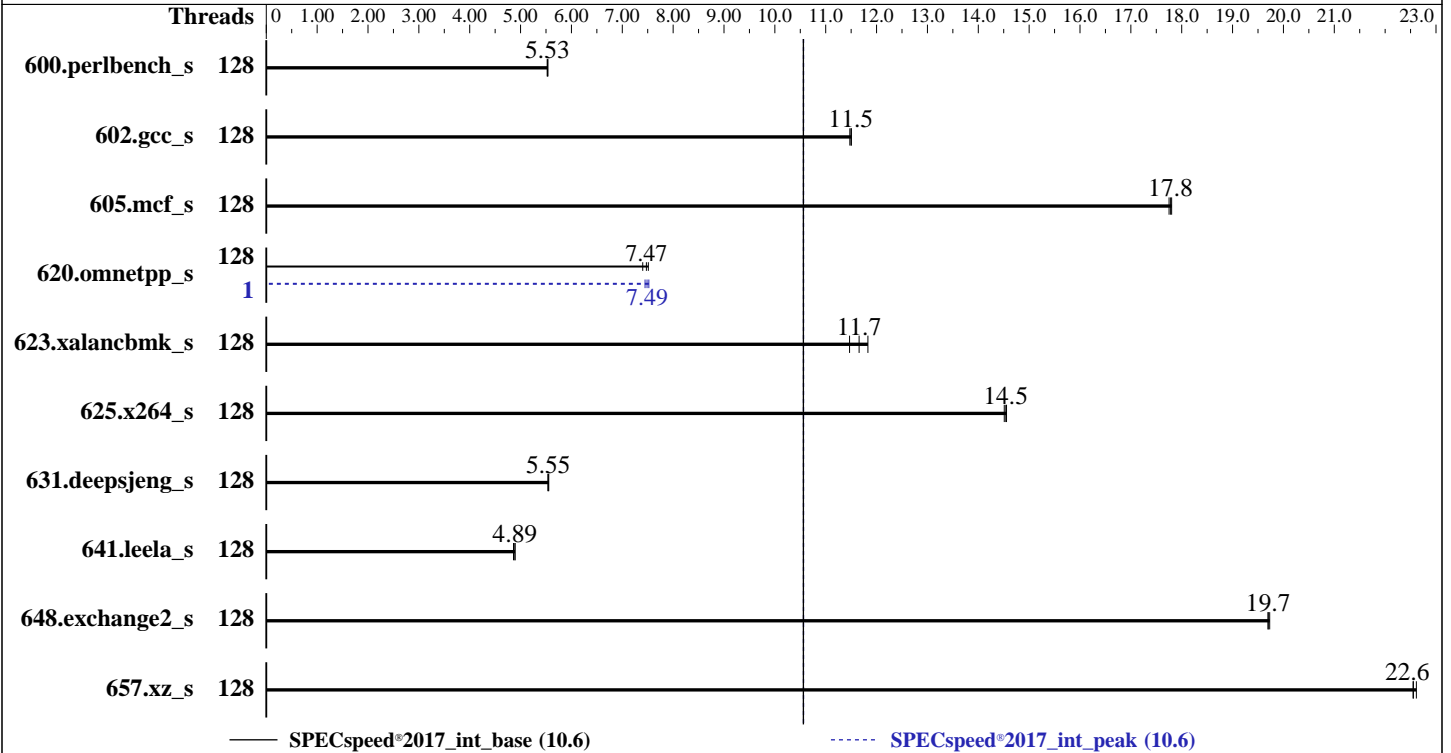
ProLiant DL365 Gen10 Plus  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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



### Hardware

CPU Name: AMD EPYC 7713  
 Max MHz: 3675  
 Nominal: 2000  
 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 chip,  
 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 02/15/2021 released  
 Mar-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



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL365 Gen10 Plus  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	128	321	5.52	<b><u>321</u></b>	<b><u>5.53</u></b>	321	5.54	128	321	5.52	<b><u>321</u></b>	<b><u>5.53</u></b>	321	5.54
602.gcc_s	128	346	11.5	347	11.5	<b><u>346</u></b>	<b><u>11.5</u></b>	128	346	11.5	347	11.5	<b><u>346</u></b>	<b><u>11.5</u></b>
605.mcf_s	128	265	17.8	266	17.8	<b><u>266</u></b>	<b><u>17.8</u></b>	128	265	17.8	266	17.8	<b><u>266</u></b>	<b><u>17.8</u></b>
620.omnetpp_s	128	217	7.51	<b><u>218</u></b>	<b><u>7.47</u></b>	220	7.40	1	<b><u>218</u></b>	<b><u>7.49</u></b>	217	7.52	219	7.45
623.xalancbmk_s	128	124	11.5	120	11.8	<b><u>122</u></b>	<b><u>11.7</u></b>	128	124	11.5	120	11.8	<b><u>122</u></b>	<b><u>11.7</u></b>
625.x264_s	128	<b><u>121</u></b>	<b><u>14.5</u></b>	121	14.6	122	14.5	128	<b><u>121</u></b>	<b><u>14.5</u></b>	121	14.6	122	14.5
631.deepsjeng_s	128	259	5.54	258	5.55	<b><u>258</u></b>	<b><u>5.55</u></b>	128	259	5.54	258	5.55	<b><u>258</u></b>	<b><u>5.55</u></b>
641.leela_s	128	351	4.86	<b><u>349</u></b>	<b><u>4.89</u></b>	349	4.89	128	351	4.86	<b><u>349</u></b>	<b><u>4.89</u></b>	349	4.89
648.exchange2_s	128	149	19.7	<b><u>149</u></b>	<b><u>19.7</u></b>	149	19.7	128	149	19.7	<b><u>149</u></b>	<b><u>19.7</u></b>	149	19.7
657.xz_s	128	273	22.6	<b><u>274</u></b>	<b><u>22.6</u></b>	274	22.5	128	273	22.6	<b><u>274</u></b>	<b><u>22.6</u></b>	274	22.5

SPECspeed®2017\_int\_base = **10.6**

SPECspeed®2017\_int\_peak = **10.6**

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.
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root to enable
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

ProLiant DL365 Gen10 Plus  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Operating System Notes (Continued)

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 620.omnetpp\_s peak run:  
GOMP\_CPU\_AFFINITY = "0"

## 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  
Last-Level Cache (LLC) as NUMA Node set to Enabled

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Platform Notes (Continued)

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  
running on admin Fri Feb 26 05:23:30 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 : AMD EPYC 7713 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 7713 64-Core Processor
Stepping:                     1
Frequency boost:              enabled
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

**SPECspeed®2017\_int\_base = 10.6**

**SPECspeed®2017\_int\_peak = 10.6**

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

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

## Platform Notes (Continued)

```

CPU MHz: 1705.169
CPU max MHz: 2000.0000
CPU min MHz: 1500.0000
BogoMIPS: 3992.66
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 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
pdpe1gb rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid
aperfmpperf pni pclmulqdq monitor sse3 fma cx16 pcid sse4_1 sse4_2 x2apic 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
bpext 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 xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc
cqm_mbm_total cqm_mbm_local clzero irperf xsaveerptr wbnoinvd arat npt lbrv svm_lock

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Platform Notes (Continued)

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: 128636 MB  
node 1 cpus: 8 9 10 11 12 13 14 15  
node 1 size: 129022 MB  
node 1 free: 128905 MB  
node 2 cpus: 16 17 18 19 20 21 22 23  
node 2 size: 129022 MB  
node 2 free: 128820 MB  
node 3 cpus: 24 25 26 27 28 29 30 31  
node 3 size: 129022 MB  
node 3 free: 128891 MB  
node 4 cpus: 32 33 34 35 36 37 38 39  
node 4 size: 129022 MB  
node 4 free: 128890 MB  
node 5 cpus: 40 41 42 43 44 45 46 47  
node 5 size: 129022 MB  
node 5 free: 128816 MB  
node 6 cpus: 48 49 50 51 52 53 54 55  
node 6 size: 129022 MB  
node 6 free: 128834 MB  
node 7 cpus: 56 57 58 59 60 61 62 63  
node 7 size: 116909 MB  
node 7 free: 116651 MB  
node 8 cpus: 64 65 66 67 68 69 70 71  
node 8 size: 129022 MB  
node 8 free: 128921 MB  
node 9 cpus: 72 73 74 75 76 77 78 79  
node 9 size: 129022 MB  
node 9 free: 128891 MB  
node 10 cpus: 80 81 82 83 84 85 86 87  
node 10 size: 129022 MB  
node 10 free: 128921 MB  
node 11 cpus: 88 89 90 91 92 93 94 95  
node 11 size: 129022 MB  
node 11 free: 128923 MB  
node 12 cpus: 96 97 98 99 100 101 102 103  
node 12 size: 128997 MB
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Platform Notes (Continued)

```

node 12 free: 128896 MB
node 13 cpus: 104 105 106 107 108 109 110 111
node 13 size: 129022 MB
node 13 free: 128879 MB
node 14 cpus: 112 113 114 115 116 117 118 119
node 14 size: 129022 MB
node 14 free: 128913 MB
node 15 cpus: 120 121 122 123 124 125 126 127
node 15 size: 129016 MB
node 15 free: 128915 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
 0:  10 11 11 11 11 11 11 11 32 32 32 32 32 32 32 32
 1:  11 10 11 11 11 11 11 11 32 32 32 32 32 32 32 32
 2:  11 11 10 11 11 11 11 11 32 32 32 32 32 32 32 32
 3:  11 11 11 10 11 11 11 11 32 32 32 32 32 32 32 32
 4:  11 11 11 11 10 11 11 11 32 32 32 32 32 32 32 32
 5:  11 11 11 11 11 10 11 11 32 32 32 32 32 32 32 32
 6:  11 11 11 11 11 11 10 11 32 32 32 32 32 32 32 32
 7:  11 11 11 11 11 11 11 10 32 32 32 32 32 32 32 32
 8:  32 32 32 32 32 32 32 32 10 11 11 11 11 11 11 11
 9:  32 32 32 32 32 32 32 32 11 10 11 11 11 11 11 11
10:  32 32 32 32 32 32 32 32 11 11 10 11 11 11 11 11
11:  32 32 32 32 32 32 32 32 11 11 11 10 11 11 11 11
12:  32 32 32 32 32 32 32 32 11 11 11 11 10 11 11 11
13:  32 32 32 32 32 32 32 32 11 11 11 11 11 10 11 11
14:  32 32 32 32 32 32 32 32 11 11 11 11 11 11 10 11
15:  32 32 32 32 32 32 32 32 11 11 11 11 11 11 11 10

```

```

From /proc/meminfo
MemTotal:      2101212484 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:
NAME="Ubuntu"

```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

**SPECspeed®2017\_int\_base = 10.6**

**SPECspeed®2017\_int\_peak = 10.6**

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

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

## Platform Notes (Continued)

```
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/swaps 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 Feb 26 05:17

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
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:

(Continued on next page)





# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Platform Notes (Continued)

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.xalanbmk\_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

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

**Test Date:** Feb-2021  
**Hardware Availability:** Apr-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,-mllvm -Wl,-enable-licm-vrp -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 -fstruct-layout=5
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -mllvm -function-specialize -flv-function-specialization
-mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
-mllvm -enable-licm-vrp -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
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-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 -reroll-loops -mllvm -aggressive-loop-unswitch
-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,-lsr-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
```

## Peak Compiler Invocation

C benchmarks:

```
clang
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

**Test Date:** Feb-2021  
**Hardware Availability:** Apr-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: basepeak = yes

C++ benchmarks:

```
620.omnetpp_s: -m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mllvm -Wl,-do-block-reorder=aggressive
-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
-finline-aggressive -mllvm -unroll-threshold=100
-flv-function-specialization -mllvm -enable-licm-vrp
-mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true
-mllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-ljemalloc -lflang
```

(Continued on next page)



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2021 Standard Performance Evaluation Corporation

**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant DL365 Gen10 Plus**  
(2.00 GHz, AMD EPYC 7713)

SPECspeed®2017\_int\_base = 10.6

SPECspeed®2017\_int\_peak = 10.6

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

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

## Peak Optimization Flags (Continued)

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/aocc300-flags-A1.html>

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revP.html>

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

<http://www.spec.org/cpu2017/flags/aocc300-flags-A1.xml>

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-V1.2-EPYC-revP.xml>

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.5 on 2021-02-26 00:23:30-0500.  
Report generated on 2021-03-18 15:42:44 by CPU2017 PDF formatter v6255.  
Originally published on 2021-03-18.