



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

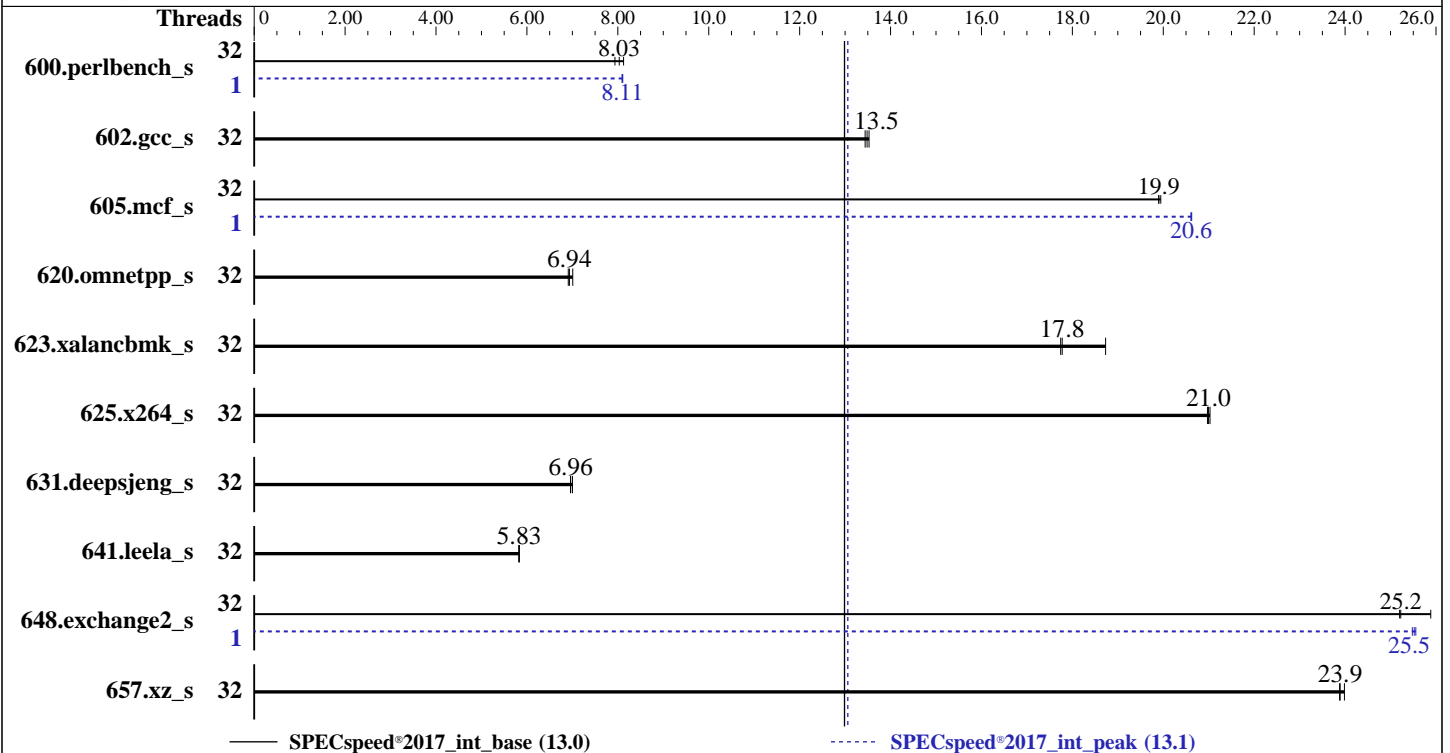
Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022



Hardware

CPU Name: AMD EPYC 9124
 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: 1 MB I+D on chip per core
 L3: 64 MB I+D on chip per chip,
 16 MB shared / 4 cores
 Other: None
 Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 2 x 480 GB SATA SSD
 Other: None

Software

OS: Ubuntu 22.04.1 LTS
 Kernel 5.15.0-50-generic
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
 Parallel: Yes
 Firmware: HPE BIOS Version v1.10 10/18/2022 released Oct-2022
 File System: ext4
 System State: Run level 5 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: None
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

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

Test Date: Nov-2022
Hardware Availability: Dec-2022
Software Availability: Nov-2022

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|-----------------|---------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|---------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Threads | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 600.perlbench_s | 32 | 224 | 7.94 | <u>221</u> | <u>8.03</u> | 218 | 8.13 | 1 | 219 | 8.11 | 219 | 8.09 | <u>219</u> | <u>8.11</u> |
| 602.gcc_s | 32 | <u>295</u> | <u>13.5</u> | 296 | 13.4 | 294 | 13.5 | 32 | <u>295</u> | <u>13.5</u> | 296 | 13.4 | 294 | 13.5 |
| 605.mcf_s | 32 | <u>237</u> | <u>19.9</u> | 237 | 19.9 | 237 | 19.9 | 1 | <u>229</u> | <u>20.6</u> | 229 | 20.6 | 229 | 20.6 |
| 620.omnetpp_s | 32 | 236 | 6.91 | <u>235</u> | <u>6.94</u> | 233 | 7.01 | 32 | 236 | 6.91 | <u>235</u> | <u>6.94</u> | 233 | 7.01 |
| 623.xalancbmk_s | 32 | 79.9 | 17.7 | <u>79.7</u> | <u>17.8</u> | 75.6 | 18.7 | 32 | 79.9 | 17.7 | <u>79.7</u> | <u>17.8</u> | 75.6 | 18.7 |
| 625.x264_s | 32 | <u>84.0</u> | <u>21.0</u> | 84.1 | 21.0 | 83.9 | 21.0 | 32 | <u>84.0</u> | <u>21.0</u> | 84.1 | 21.0 | 83.9 | 21.0 |
| 631.deepsjeng_s | 32 | <u>206</u> | <u>6.96</u> | 205 | 7.00 | 206 | 6.96 | 32 | <u>206</u> | <u>6.96</u> | 205 | 7.00 | 206 | 6.96 |
| 641.leela_s | 32 | <u>293</u> | <u>5.83</u> | 293 | 5.82 | 293 | 5.83 | 32 | <u>293</u> | <u>5.83</u> | 293 | 5.82 | 293 | 5.83 |
| 648.exchange2_s | 32 | 117 | 25.2 | 114 | 25.9 | <u>117</u> | <u>25.2</u> | 1 | 115 | 25.6 | <u>115</u> | <u>25.5</u> | 115 | 25.5 |
| 657.xz_s | 32 | 258 | 24.0 | <u>259</u> | <u>23.9</u> | 259 | 23.9 | 32 | 258 | 24.0 | <u>259</u> | <u>23.9</u> | 259 | 23.9 |

SPECspeed®2017_int_base = **13.0**

SPECspeed®2017_int_peak = **13.1**

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 limit
'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>

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

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Operating System Notes (Continued)

To enable Transparent Hugepages (THP) for all allocations,
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-31"
LD_LIBRARY_PATH = "/home/CPU2017/amd_speed_aocc400_genoa_B_lib/lib:"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
MALLOC_CONF = "oversize_threshold:0,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 = "15"

Environment variables set by runcpu during the 605.mcf_s peak run:
GOMP_CPU_AFFINITY = "15"

Environment variables set by runcpu during the 648.exchange2_s peak run:
GOMP_CPU_AFFINITY = "15"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

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.

Platform Notes

BIOS Configuration
Workload Profile set to General Peak Frequency Compute
Determinism Control set to Manual
Performance Determinism set to Power Deterministic

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Platform Notes (Continued)

AMD SMT Option set to Disabled
 NUMA memory domains per socket set to Four memory domains per socket
 Last-Level Cache (LLC) as NUMA Node set to Enabled
 ACPI CST C2 Latency set to 18 microseconds
 Memory PStates set to Disabled
 Thermal Configuration set to Maximum Cooling

The system ROM used for this result contains microcode version 0x0A10110e for the AMD EPYC 9nn4X family of processors. The reference code/AGESA version used in this ROM is version GenoaPI 1.0.0.1-L3

Sysinfo program /home/CPU2017/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on admin1 Mon Jun 27 19:52:07 2022

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 9124 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 from util-linux 2.37.2:
 Architecture: x86_64
 CPU op-mode(s): 32-bit, 64-bit
 Address sizes: 52 bits physical, 57 bits virtual
 Byte Order: Little Endian
 CPU(s): 32
 On-line CPU(s) list: 0-31
 Vendor ID: AuthenticAMD
 Model name: AMD EPYC 9124 16-Core Processor
 CPU family: 25
 Model: 17
 Thread(s) per core: 1
 Core(s) per socket: 16
 Socket(s): 2
 Stepping: 1
 Frequency boost: enabled
 CPU max MHz: 3713.0000

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Platform Notes (Continued)

```

CPU min MHz:                400.0000
BogoMIPS:                    5990.86
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 rapl 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 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 vmcall fsgsbase bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f
avx512dq rdseed adx smap avx512ifma clflushopt clwb avx512cd sha_ni avx512bw
avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local avx512_bf16 clzero irperf xsaveerptr rdpru wbnoinvd amd_ppin cppc arat
npt lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
pausefilter pfthreshold avic v_vmsave_vmload vgif v_spec_ctrl avx512vbmi umip pku
ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg avx512_vpopcntdq
la57 rdpid overflow_recov succor smca fsrm flush_lld
Virtualization:              AMD-V
L1d cache:                    1 MiB (32 instances)
L1i cache:                    1 MiB (32 instances)
L2 cache:                     32 MiB (32 instances)
L3 cache:                     128 MiB (8 instances)
NUMA node(s):                 8
NUMA node0 CPU(s):           0-3
NUMA node1 CPU(s):           8-11
NUMA node2 CPU(s):           12-15
NUMA node3 CPU(s):           4-7
NUMA node4 CPU(s):           16-19
NUMA node5 CPU(s):           24-27
NUMA node6 CPU(s):           28-31
NUMA node7 CPU(s):           20-23
Vulnerability Itlb multihit:  Not affected
Vulnerability L1tf:           Not affected
Vulnerability Mds:            Not affected
Vulnerability Meltdown:       Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed:       Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via
prctl and seccomp
Vulnerability Spectre v1:      Mitigation; usercopy/swaps barriers and __user
pointer sanitization
Vulnerability Spectre v2:      Mitigation; Retpolines, IBPB conditional, IBRS_FW,
STIBP disabled, RSB filling, PBRBS-eIBRS Not affected
Vulnerability Srbds:          Not affected
Vulnerability Tsx async abort: Not affected

```

From `lscpu --cache:`

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Platform Notes (Continued)

| NAME | ONE-SIZE | ALL-SIZE | WAYS | TYPE | LEVEL | SETS | PHY-LINE | COHERENCY-SIZE |
|------|----------|----------|------|-------------|-------|-------|----------|----------------|
| Lld | 32K | 1M | 8 | Data | 1 | 64 | 1 | 64 |
| Lli | 32K | 1M | 8 | Instruction | 1 | 64 | 1 | 64 |
| L2 | 1M | 32M | 8 | Unified | 2 | 2048 | 1 | 64 |
| L3 | 16M | 128M | 16 | Unified | 3 | 16384 | 1 | 64 |

```
/proc/cpuinfo cache data
cache size : 1024 KB
```

```
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: 193224 MB
```

```
node 0 free: 192871 MB
```

```
node 1 cpus: 8 9 10 11
```

```
node 1 size: 193534 MB
```

```
node 1 free: 193388 MB
```

```
node 2 cpus: 12 13 14 15
```

```
node 2 size: 193534 MB
```

```
node 2 free: 193276 MB
```

```
node 3 cpus: 4 5 6 7
```

```
node 3 size: 193499 MB
```

```
node 3 free: 193302 MB
```

```
node 4 cpus: 16 17 18 19
```

```
node 4 size: 193534 MB
```

```
node 4 free: 193400 MB
```

```
node 5 cpus: 24 25 26 27
```

```
node 5 size: 193534 MB
```

```
node 5 free: 193343 MB
```

```
node 6 cpus: 28 29 30 31
```

```
node 6 size: 193534 MB
```

```
node 6 free: 193418 MB
```

```
node 7 cpus: 20 21 22 23
```

```
node 7 size: 193493 MB
```

```
node 7 free: 193323 MB
```

```
node distances:
```

```
node 0 1 2 3 4 5 6 7
```

```
0: 10 12 12 12 32 32 32 32
```

```
1: 12 10 12 12 32 32 32 32
```

```
2: 12 12 10 12 32 32 32 32
```

```
3: 12 12 12 10 32 32 32 32
```

```
4: 32 32 32 32 10 12 12 12
```

```
5: 32 32 32 32 12 10 12 12
```

```
6: 32 32 32 32 12 12 10 12
```

```
7: 32 32 32 32 12 12 12 10
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Platform Notes (Continued)

From /proc/meminfo

MemTotal: 1585040992 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 22.04.1 LTS

From /etc/*release* /etc/*version*

debian_version: bookworm/sid

os-release:

PRETTY_NAME="Ubuntu 22.04.1 LTS"

NAME="Ubuntu"

VERSION_ID="22.04"

VERSION="22.04.1 LTS (Jammy Jellyfish)"

VERSION_CODENAME=jammy

ID=ubuntu

ID_LIKE=debian

HOME_URL="https://www.ubuntu.com/"

uname -a:

Linux admin1 5.15.0-50-generic #56-Ubuntu SMP Tue Sep 20 13:23:26 UTC 2022 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

mmio_stale_data:

Not affected

retbleed:

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: Retpolines, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling,

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Platform Notes (Continued)

PBR SB-eIBRS: Not affected

CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected

CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 5 Jun 27 18:30

SPEC is set to: /home/CPU2017

| Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
|-----------------------------------|------|------|------|-------|------|------------|
| /dev/mapper/ubuntu--vg-ubuntu--lv | ext4 | 437G | 176G | 243G | 42% | / |

From /sys/devices/virtual/dmi/id

```
Vendor:          HPE
Product:         ProLiant DL365 Gen11
Product Family: ProLiant
Serial:          DL365G11-001
```

Additional information from dmidecode 3.3 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:

```
21x Hynix HMC94MEBRA121N 64 GB 2 rank 4800
3x Hynix HMC94MEBRA123N 64 GB 2 rank 4800
```

BIOS:

```
BIOS Vendor:      HPE
BIOS Version:     1.10
BIOS Date:        10/18/2022
BIOS Revision:    1.10
Firmware Revision: 1.10
```

(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 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on  
LLVM Mirror.Version.14.0.6)  
Target: x86_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin  
-----
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

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

Test Date: Nov-2022
Hardware Availability: Dec-2022
Software Availability: Nov-2022

Compiler Version Notes (Continued)

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

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin
=====

=====
Fortran | 648.exchange2_s(base, peak)
=====

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/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

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

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

Test Date: Nov-2022
Hardware Availability: Dec-2022
Software Availability: Nov-2022

Base Portability Flags (Continued)

657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -fopenmp=libomp -lomp -lamdlibm -lflang
-lamdalloc
```

C++ benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fvirtual-function-elimination -fvisibility=hidden -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc-ext
```

Fortran benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -mllvm -optimize-strided-mem-cost
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc
```

Base Other Flags

C benchmarks:

```
-Wno-return-type -Wno-unused-command-line-argument
```

C++ benchmarks:

```
-Wno-unused-command-line-argument
```

(Continued on next page)



SPEC CPU®2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed®2017_int_base = 13.0

SPECspeed®2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Base Other Flags (Continued)

Fortran benchmarks:

-Wno-unused-command-line-argument

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 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Ofast -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto
-fstruct-layout=9 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

602.gcc_s: basepeak = yes

605.mcf_s: Same as 600.perlbench_s

625.x264_s: basepeak = yes

657.xz_s: basepeak = yes

(Continued on next page)



SPEC CPU[®]2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed[®]2017_int_base = 13.0

SPECspeed[®]2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

Peak Optimization Flags (Continued)

C++ benchmarks:

620.omnetpp_s: basepeak = yes

623.xalancbmk_s: basepeak = yes

631.deepsjeng_s: basepeak = yes

641.leela_s: basepeak = yes

Fortran benchmarks:

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

-Wl,-mllvm -Wl,-reduce-array-computations=3

-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop

-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver4 -fveclib=AMDLIBM

-ffast-math -fopenmp -flto -mllvm -optimize-strided-mem-cost

-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -fopenmp=libomp

-lomp -lamdlibm -lamdalloc -lflang

Peak Other Flags

C benchmarks:

-Wno-return-type -Wno-unused-command-line-argument

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-Genoa-rev2.0.html>

<http://www.spec.org/cpu2017/flags/aocc400-flags.html>

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

<http://www.spec.org/cpu2017/flags/HPE-Platform-Flags-AMD-Genoa-rev2.0.xml>

<http://www.spec.org/cpu2017/flags/aocc400-flags.xml>



SPEC CPU[®]2017 Integer Speed Result

Copyright 2017-2022 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(3.00 GHz, AMD EPYC 9124)

SPECspeed[®]2017_int_base = 13.0

SPECspeed[®]2017_int_peak = 13.1

CPU2017 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Nov-2022

Hardware Availability: Dec-2022

Software Availability: Nov-2022

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.

Tested with SPEC CPU[®]2017 v1.1.8 on 2022-06-27 15:52:07-0400.
Report generated on 2022-12-08 15:32:36 by CPU2017 PDF formatter v6442.
Originally published on 2022-12-08.