SPEC CPU®2026 Integer Speed Result

Hewlett Packard Enterprise

(Test Sponsor: HPE)

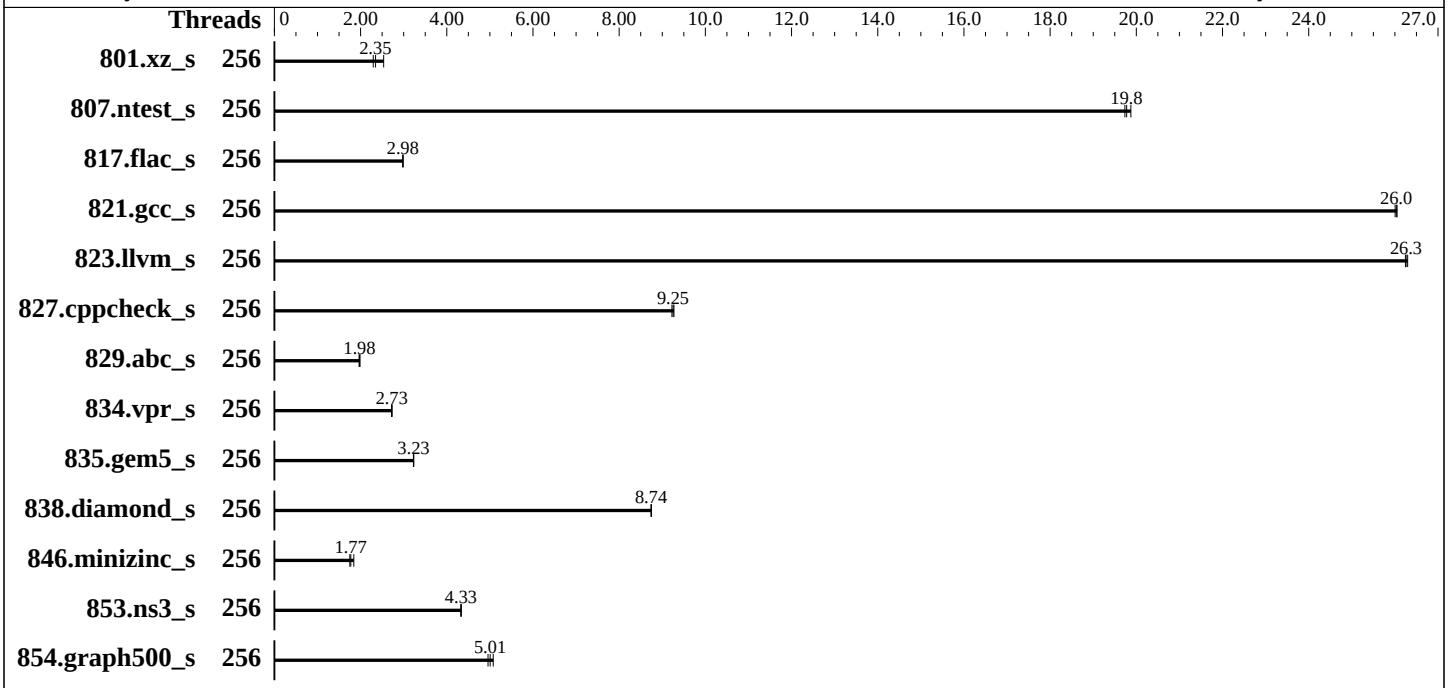
ProLiant DL385 Gen11
(2.25 GHz, AMD EPYC 9754)

SPECspeed®2026_int_base = 5.58

SPECspeed®2026_int_peak = 5.58

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Feb-2026
Hardware Availability: Jun-2023
Software Availability: Jan-2026



Hardware

CPU Name:	AMD EPYC 9754
Max MHz:	3100
Nominal:	2250
Enabled:	256 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:	256 MB I+D on chip per chip, 16 MB shared / 8 cores
Other:	None
Memory:	3 TB (24 x 128 GB 2Rx4 PC5-4800B-R)
Storage:	1 x 480 GB NVMe SSD
Cooling:	DLC
Other:	None

Software

OS:	Ubuntu 24.04.3 LTS Kernel 6.8.0-94-generic
Compiler:	C/C++: Version 5.1.0 of AOCC Fortran: Flang v22
Compiler Category:	Vendor
Firmware:	HPE BIOS Version v2.90 released Jan-2026
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 is set to prefer performance at the cost of additional power usage

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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
801.xz_s	256	**252**	**2.35**	233	2.54	258	2.29	256	**252**	**2.35**	233	2.54	258	2.29
807.ntest_s	256	57.4	19.9	57.8	19.7	**57.6**	**19.8**	256	57.4	19.9	57.8	19.7	**57.6**	**19.8**
817.flac_s	256	**582**	**2.98**	582	2.98	583	2.98	256	**582**	**2.98**	582	2.98	583	2.98
821.gcc_s	256	79.6	26.0	**79.5**	**26.0**	79.5	26.1	256	79.6	26.0	**79.5**	**26.0**	79.5	26.1
823.llvm_s	256	**53.7**	**26.3**	53.8	26.2	53.7	26.3	256	**53.7**	**26.3**	53.8	26.2	53.7	26.3
827.cppcheck_s	256	**121**	**9.25**	121	9.22	121	9.27	256	**121**	**9.25**	121	9.22	121	9.27
829.abc_s	256	**420**	**1.98**	418	1.99	423	1.96	256	**420**	**1.98**	418	1.99	423	1.96
834.vpr_s	256	350	2.73	**350**	**2.73**	351	2.72	256	350	2.73	**350**	**2.73**	351	2.72
835.gem5_s	256	352	3.23	**353**	**3.23**	353	3.23	256	352	3.23	**353**	**3.23**	353	3.23
838.diamond_s	256	115	8.74	114	8.75	**114**	**8.74**	256	115	8.74	114	8.75	**114**	**8.74**
846.minizinc_s	256	**378**	**1.77**	364	1.84	383	1.75	256	**378**	**1.77**	364	1.84	383	1.75
853.ns3_s	256	**266**	**4.33**	266	4.34	266	4.33	256	**266**	**4.33**	266	4.34	266	4.33
854.graph500_s	256	123	4.96	**122**	**5.01**	120	5.08	256	123	4.96	**122**	**5.01**	120	5.08

SPECspeed®2026_int_base = 5.58

SPECspeed®2026_int_peak = 5.58

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/
Flang v22 is available at
https://flang.llvm.org/
```

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,
```

(Continued on next page)

Operating System Notes (Continued)

```
'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.
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 = "0-255"
LD_LIBRARY_PATH =
     "/home/cpu2026/amd_speed_aocc510_flang22_znver5_A_lib/lib:/home/cpu2026/
     amd_speed_aocc510_flang22_znver5_A_lib/lib32:"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries were compiled on a system with an AMD EPYC 9754 CPU + 768 GiB
Memory using Ubuntu 24.04
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 Configurations : Parameters are selected in the order shown below
Workload Profile set to General Peak Frequency Compute
Determinism Control set to Manual
 Performance Determinism set to Power Deterministic
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
Thermal Configuration set to Maximum Cooling
Workload Profile set to Custom
 Power Regulator set to OS Control Mode

 Sysinfo program /home/cpu2026/bin/sysinfo
```

(Continued on next page)

Platform Notes (Continued)

```
Rev: 069f95da7e7f5d81b2ce48a82150e54f
running on admin1 Fri Feb  6 10:13:50 2026

SUT (System Under Test) info as seen by some common utilities.

------------------------------------------------------------
Table of contents
------------------------------------------------------------
 1. uname -srvm
 2. w
 3. Username
 4. ulimit -a
 5. sysinfo process ancestry
 6. /proc/cpuinfo
 7. lscpu
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.12)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -srvm
  Linux 6.8.0-94-generic #96-Ubuntu SMP PREEMPT_DYNAMIC Fri Jan  9 20:36:55 UTC 2026 x86_64

------------------------------------------------------------
2. w
   10:13:50 up 22 min,  2 users,  load average: 0.15, 0.03, 0.01
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU  WHAT
  admin1            10.30.195.94     10:02   22:43   0.00s  0.04s sshd: admin1 [priv]
  admin1            10.30.195.94     09:51   22:43   0.00s  0.03s sshd: admin1 [priv]

------------------------------------------------------------
3. Username
  From environment variable $USER:  root
```

(Continued on next page)

Platform Notes (Continued)

```
  From the command 'logname':       admin1

------------------------------------------------------------
4. ulimit -a
  time(seconds)        unlimited
  file(blocks)         unlimited
  data(kbytes)         unlimited
  stack(kbytes)        unlimited
  coredump(blocks)     0
  memory(kbytes)       unlimited
  locked memory(kbytes) 2097152
  process              12383913
  nofiles              1024
  vmemory(kbytes)      unlimited
  locks                unlimited
  rtprio               0

------------------------------------------------------------
5. sysinfo process ancestry
 /sbin/init
 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
 sshd: admin1 [priv]
 sshd: admin1@pts/0
 -bash
 sudo su
 sudo su
 su
 bash
 python3 ./run_amd_speed_aocc510_flang22_znver5_A1.py
 /bin/bash ./amd_speed_aocc510_flang22_znver5_A1.sh
runcpu --config amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3 intspeed
runcpu --configfile amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3
  --nopower --runmode speed --tune base --size test:train:refspeed intspeed --nopreenv --note-preenv
  --logfile $SPEC/tmp/CPU2026.001/templogs/preenv.intspeed.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9754 128-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 25
    model           : 160
    stepping        : 1
    microcode       : 0xaa00116
    bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso vmscape
    TLB size        : 3584 4K pages
```

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Platform Notes (Continued)

```
     cpu cores       : 128
     siblings        : 128
     2 physical ids (chips)
     256 processors (hardware threads)
     physical id 0: core ids
    0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
     240-247
     physical id 1: core ids
    0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
     240-247
     physical id 0: apicids
    0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
     240-247
     physical id 1: apicids
    256-263,272-279,288-295,304-311,320-327,336-343,352-359,368-375,384-391,400-407,416-423,432-439,448-455,4
     64-471,480-487,496-503
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
    virtualized systems.  Use the above data carefully.

 ------------------------------------------------------------
 7. lscpu

 From lscpu from util-linux 2.39.3:
   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):                               256
   On-line CPU(s) list:                  0-255
   Vendor ID:                            AuthenticAMD
   BIOS Vendor ID:                       Advanced Micro Devices, Inc.
   Model name:                           AMD EPYC 9754 128-Core Processor
   BIOS Model name:                    AMD EPYC 9754 128-Core Processor                CPU @ 2.2GHz
   BIOS CPU family:                      107
   CPU family:                           25
   Model:                                160
   Thread(s) per core:                   1
   Core(s) per socket:                   128
   Socket(s):                            2
   Stepping:                             1
   Frequency boost:                      enabled
   CPU(s) scaling MHz:                   101%
   CPU max MHz:                          2250.0000
   CPU min MHz:                          1500.0000
   BogoMIPS:                             4492.85
   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
```

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Platform Notes (Continued)

```
                  rdtscp lm constant_tsc rep_good amd_lbr_v2 nopl nonstop_tsc cpuid
                extd_apicid aperfmperf 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 hw_pstate ssbd mba perfmon_v2
                 ibrs ibpb stibp ibrs_enhanced vmmcall 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
                   user_shstk avx512_bf16 clzero irperf xsaveerptr rdpru wbnoinvd
                amd_ppin cppc amd_ibpb_ret arat npt lbrv svm_lock nrip_save tsc_scale
                 vmcb_clean flushbyasid decodeassists pausefilter pfthreshold avic
                  v_vmsave_vmload vgif x2avic v_spec_ctrl vnmi avx512vbmi umip pku
                 ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
                avx512_vpopcntdq la57 rdpid overflow_recov succor smca fsrm flush_l1d
                        debug_swap ibpb_exit_to_user
  Virtualization:       AMD-V
  L1d cache:            8 MiB (256 instances)
  L1i cache:            8 MiB (256 instances)
  L2 cache:             256 MiB (256 instances)
  L3 cache:             512 MiB (32 instances)
  NUMA node(s):         32
  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
  NUMA node16 CPU(s):   128-135
  NUMA node17 CPU(s):   136-143
  NUMA node18 CPU(s):   144-151
  NUMA node19 CPU(s):   152-159
  NUMA node20 CPU(s):   160-167
  NUMA node21 CPU(s):   168-175
  NUMA node22 CPU(s):   176-183
  NUMA node23 CPU(s):   184-191
```

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Platform Notes (Continued)

```
  NUMA node24 CPU(s):                   192-199
  NUMA node25 CPU(s):                   200-207
  NUMA node26 CPU(s):                   208-215
  NUMA node27 CPU(s):                   216-223
  NUMA node28 CPU(s):                   224-231
  NUMA node29 CPU(s):                   232-239
  NUMA node30 CPU(s):                   240-247
  NUMA node31 CPU(s):                   248-255
  Vulnerability Gather data sampling:   Not affected
  Vulnerability Itlb multihit:          Not affected
  Vulnerability L1tf:                   Not affected
  Vulnerability Mds:                    Not affected
  Vulnerability Meltdown:               Not affected
  Vulnerability Mmio stale data:        Not affected
  Vulnerability Reg file data sampling: Not affected
  Vulnerability Retbleed:               Not affected
  Vulnerability Spec rstack overflow:   Mitigation; Safe RET
  Vulnerability Spec store bypass:      Mitigation; Speculative Store Bypass disabled via prctl
  Vulnerability Spectre v1:             Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:             Mitigation; Enhanced / Automatic IBRS; IBPB conditional; STIBP
                                        disabled; RSB filling; PBRSB-eIBRS Not affected; BHI Not affected
  Vulnerability Srbds:                  Not affected
  Vulnerability Tsx async abort:        Not affected
  Vulnerability Vmscape:                Mitigation; IBPB before exit to userspace

From lscpu --cache:
     NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
     L1d       32K       8M    8 Data            1    64        1             64
     L1i       32K       8M    8 Instruction     1    64        1             64
     L2         1M     256M    8 Unified         2  2048        1             64
     L3        16M     512M   16 Unified         3 16384        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 32 nodes (0-31)
  node 0 cpus: 0-7
  node 0 size: 96449 MB
  node 0 free: 95989 MB
  node 1 cpus: 8-15
  node 1 size: 96765 MB
  node 1 free: 96639 MB
  node 2 cpus: 16-23
  node 2 size: 96765 MB
  node 2 free: 96635 MB
  node 3 cpus: 24-31
  node 3 size: 96765 MB
```

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Platform Notes (Continued)

```
node 3 free: 96632 MB
node 4 cpus: 32-39
node 4 size: 96765 MB
node 4 free: 96644 MB
node 5 cpus: 40-47
node 5 size: 96721 MB
node 5 free: 96624 MB
node 6 cpus: 48-55
node 6 size: 96765 MB
node 6 free: 96662 MB
node 7 cpus: 56-63
node 7 size: 96765 MB
node 7 free: 96654 MB
node 8 cpus: 64-71
node 8 size: 96765 MB
node 8 free: 96610 MB
node 9 cpus: 72-79
node 9 size: 96765 MB
node 9 free: 96642 MB
node 10 cpus: 80-87
node 10 size: 96765 MB
node 10 free: 96650 MB
node 11 cpus: 88-95
node 11 size: 96765 MB
node 11 free: 96655 MB
node 12 cpus: 96-103
node 12 size: 96765 MB
node 12 free: 96667 MB
node 13 cpus: 104-111
node 13 size: 96765 MB
node 13 free: 96656 MB
node 14 cpus: 112-119
node 14 size: 96765 MB
node 14 free: 96656 MB
node 15 cpus: 120-127
node 15 size: 96765 MB
node 15 free: 96660 MB
node 16 cpus: 128-135
node 16 size: 96765 MB
node 16 free: 96620 MB
node 17 cpus: 136-143
node 17 size: 96765 MB
node 17 free: 96528 MB
node 18 cpus: 144-151
node 18 size: 96765 MB
node 18 free: 96639 MB
node 19 cpus: 152-159
```

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Platform Notes (Continued)

```
   node 19 size: 96765 MB
   node 19 free: 96446 MB
   node 20 cpus: 160-167
   node 20 size: 96765 MB
   node 20 free: 96648 MB
   node 21 cpus: 168-175
   node 21 size: 96765 MB
   node 21 free: 96662 MB
   node 22 cpus: 176-183
   node 22 size: 96765 MB
   node 22 free: 96666 MB
   node 23 cpus: 184-191
   node 23 size: 96765 MB
   node 23 free: 96645 MB
   node 24 cpus: 192-199
   node 24 size: 96765 MB
   node 24 free: 96677 MB
   node 25 cpus: 200-207
   node 25 size: 96765 MB
   node 25 free: 96668 MB
   node 26 cpus: 208-215
   node 26 size: 96765 MB
   node 26 free: 96630 MB
   node 27 cpus: 216-223
   node 27 size: 96765 MB
   node 27 free: 96651 MB
   node 28 cpus: 224-231
   node 28 size: 96765 MB
   node 28 free: 96662 MB
   node 29 cpus: 232-239
   node 29 size: 96765 MB
   node 29 free: 96666 MB
   node 30 cpus: 240-247
   node 30 size: 96765 MB
   node 30 free: 96656 MB
   node 31 cpus: 248-255
   node 31 size: 96699 MB
   node 31 free: 96603 MB
   node distances:
  node   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
    0:  10  11  11  11  12  12  12  12  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
     32  32  32  32  32  32  32
    1:  11  10  11  11  12  12  12  12  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
     32  32  32  32  32  32  32
    2:  11  11  10  11  12  12  12  12  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
     32  32  32  32  32  32  32
```

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Platform Notes (Continued)

```
  3:  11  11  11  10  12  12  12  12  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
  4:  12  12  12  12  10  11  11  11  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
  5:  12  12  12  12  11  10  11  11  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
  6:  12  12  12  12  11  11  10  11  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
  7:  12  12  12  12  11  11  11  10  12  12  12  12  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
  8:  12  12  12  12  12  12  12  12  10  11  11  11  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
  9:  12  12  12  12  12  12  12  12  11  10  11  11  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
 10:  12  12  12  12  12  12  12  12  11  11  10  11  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
 11:  12  12  12  12  12  12  12  12  11  11  11  10  12  12  12  12  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
 12:  12  12  12  12  12  12  12  12  12  12  12  12  10  11  11  11  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
 13:  12  12  12  12  12  12  12  12  12  12  12  12  11  10  11  11  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
 14:  12  12  12  12  12  12  12  12  12  12  12  12  11  11  10  11  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
 15:  12  12  12  12  12  12  12  12  12  12  12  12  11  11  11  10  32  32  32  32  32  32  32  32  32
      32  32  32  32  32  32  32
 16:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  10  11  11  11  12  12  12  12  12
      12  12  12  12  12  12  12
 17:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  10  11  11  12  12  12  12  12
      12  12  12  12  12  12  12
 18:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  10  11  12  12  12  12  12
      12  12  12  12  12  12  12
 19:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  10  12  12  12  12  12
      12  12  12  12  12  12  12
 20:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  10  11  11  11  12
      12  12  12  12  12  12  12
 21:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  11  10  11  11  12
      12  12  12  12  12  12  12
 22:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  11  11  10  11  12
      12  12  12  12  12  12  12
 23:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  11  11  11  10  12
      12  12  12  12  12  12  12
 24:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  10
      11  11  11  12  12  12  12
 25:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  11
      10  11  11  12  12  12  12
 26:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  11
```

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Platform Notes (Continued)

```
    11  10  11  12  12  12  12
   27:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  11
    11  11  10  12  12  12  12
   28:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  12
    12  12  12  10  11  11  11
   29:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  12
    12  12  12  11  10  11  11
   30:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  12
    12  12  12  11  11  10  11
   31:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12  12
    12  12  12  11  11  11  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       3170363788 kB

------------------------------------------------------------
10. who -r
  run-level 5 Feb 6 09:51

------------------------------------------------------------
11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.12)
  Default Target  Status
  graphical       running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          ModemManager apparmor apport blk-availability cloud-config cloud-final cloud-init
                   cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
                     grub-common grub-initrd-fallback keyboard-setup lvm2-monitor multipathd
                   networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog secureboot-db setvtrgb
                     snapd sysstat systemd-networkd systemd-networkd-wait-online systemd-pstore
                    systemd-resolved thermald tuned ua-reboot-cmds ubuntu-advantage udisks2 ufw
                     unattended-upgrades vgauth
  enabled-runtime    netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
  disabled           console-getty debug-shell iscsid nftables rsync serial-getty@ ssh
                    systemd-boot-check-no-failures systemd-confext systemd-network-generator
                  systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code
                  systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy
                  systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysext
                     systemd-time-wait-sync systemd-timesyncd upower
  indirect           systemd-sysupdate systemd-sysupdate-reboot uuidd
  masked           cryptdisks cryptdisks-early hwclock multipath-tools-boot screen-cleanup sudo x11-common

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
```

(Continued on next page)

Platform Notes (Continued)

```
  BOOT_IMAGE=/boot/vmlinuz-6.8.0-94-generic
  root=UUID=60685607-d408-4b5d-9478-a6a431e11442
  ro

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 154:
    current policy: frequency should be within 1.50 GHz and 2.25 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes
      Boost States: 0
      Total States: 3
      Pstate-P0:  2250MHz

------------------------------------------------------------
15. tuned-adm active
  Current active profile: balanced

------------------------------------------------------------
16. sysctl
  kernel.numa_balancing               1
  kernel.randomize_va_space           0
  vm.compaction_proactiveness        20
  vm.dirty_background_bytes           0
  vm.dirty_background_ratio          10
  vm.dirty_bytes                      0
  vm.dirty_expire_centisecs        3000
  vm.dirty_ratio                      8
  vm.dirty_writeback_centisecs      500
  vm.dirtytime_expire_seconds     43200
  vm.extfrag_threshold              500
  vm.min_unmapped_ratio               1
  vm.nr_hugepages                     0
  vm.nr_hugepages_mempolicy           0
  vm.nr_overcommit_hugepages          0
  vm.swappiness                       1
  vm.watermark_boost_factor       15000
  vm.watermark_scale_factor          10
  vm.zone_reclaim_mode                1

------------------------------------------------------------
17. /sys/kernel/mm/transparent_hugepage
  defrag          [always] defer defer+madvise madvise never
  enabled         [always] madvise never
```

(Continued on next page)

Platform Notes (Continued)

```
  hpage_pmd_size  2097152
  shmem_enabled   always within_size advise [never] deny force

------------------------------------------------------------
18. /sys/kernel/mm/transparent_hugepage/khugepaged
  alloc_sleep_millisecs   60000
  defrag                      1
  max_ptes_none             511
  max_ptes_shared           256
  max_ptes_swap              64
  pages_to_scan            4096
  scan_sleep_millisecs    10000

------------------------------------------------------------
19. OS release
  From /etc/*-release /etc/*-version
  os-release Ubuntu 24.04.3 LTS

------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2026
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda2      ext4  439G   60G  356G  15% /

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:          HPE
    Product:         ProLiant DL385 Gen11
    Product Family: ProLiant
    Serial:          DL385G11-006

------------------------------------------------------------
22. dmidecode
  Additional information from dmidecode 3.5 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:
    5x Hynix HMCT04MEERA129N 128 GB 4 rank 4800
    3x Hynix HMCT04MEERA131N 128 GB 4 rank 4800
    11x Hynix HMCT04MEERA133N 128 GB 4 rank 4800
    5x Hynix HMCT04MEERA135N 128 GB 4 rank 4800


------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
```

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Platform Notes (Continued)

```
    BIOS Vendor:       HPE
    BIOS Version:      2.90
    BIOS Date:         01/09/2026
    BIOS Revision:     2.90
    Firmware Revision: 1.66
```

Compiler Version Notes

```
==============================================================================
C      | 854.graph500_s(base)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------

==============================================================================
C++    | 807.ntest_s(base) 827.cppcheck_s(base) 853.ns3_s(base)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------

==============================================================================
C++, C | 801.xz_s(base) 817.flac_s(base) 821.gcc_s(base) 823.llvm_s(base)
       | 829.abc_s(base) 834.vpr_s(base) 835.gem5_s(base) 838.diamond_s(base)
       | 846.minizinc_s(base)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

(Continued on next page)

Base Compiler Invocation (Continued)

Benchmarks using both C and C++:
clang++ clang

Base Portability Flags

801.xz_s: -DSPEC_LP64
807.ntest_s: -DSPEC_LP64
817.flac_s: -DSPEC_LP64
821.gcc_s: -DSPEC_LP64
823.llvm_s: -DSPEC_LP64
827.cppcheck_s: -DSPEC_LP64
829.abc_s: -DSPEC_LP64
834.vpr_s: -fno-finite-math-only -DSPEC_LP64
835.gem5_s: -fno-finite-math-only -DSPEC_LP64
838.diamond_s: -DSPEC_LP64
846.minizinc_s: -DSPEC_LP64
853.ns3_s: -fno-finite-math-only -DSPEC_LP64
854.graph500_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Wl,-mllvm -Wl,-extra-inliner -O3 -flto
-march=znver5 -fveclib=AMDLIBM -ffast-math -zopt -fremap-arrays
-fstrip-mining -fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50
-fopenmp -DSPEC_OPENMP -lamdalloc -lamdlibm -fopenmp=libomp -lomp

C++ benchmarks:
-m64 -std=c++17 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -zopt -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -fopenmp -DSPEC_OPENMP
-fvirtual-function-elimination -fvisibility=hidden -lamdalloc
-lamdlibm -fopenmp=libomp -lomp

Benchmarks using both C and C++:
-m64 -std=c++17 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

(Continued on next page)

Base Optimization Flags (Continued)

Benchmarks using both C and C++ (continued):
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -zopt -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp -lomp

Base Other Flags

C benchmarks:
-Wno-return-type

Benchmarks using both C and C++:
-Wno-return-type

Peak Optimization Flags

C benchmarks:

854.graph500_s: basepeak = yes

C++ benchmarks:

807.ntest_s: basepeak = yes

827.cppcheck_s: basepeak = yes

853.ns3_s: basepeak = yes

Benchmarks using both C and C++:

801.xz_s: basepeak = yes

817.flac_s: basepeak = yes

821.gcc_s: basepeak = yes

823.llvm_s: basepeak = yes

(Continued on next page)

Peak Optimization Flags (Continued)

829.abc_s: `basepeak = yes`

834.vpr_s: `basepeak = yes`

835.gem5_s: `basepeak = yes`

838.diamond_s: `basepeak = yes`

846.minizinc_s: `basepeak = yes`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2026/results/flags/HPE-Platform-Flags-AMD-Turin-rev1.11.html`
`http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2026/results/flags/HPE-Platform-Flags-AMD-Turin-rev1.11.xml`
`http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.xml`

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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