SPEC CPU®2026 Floating Point Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

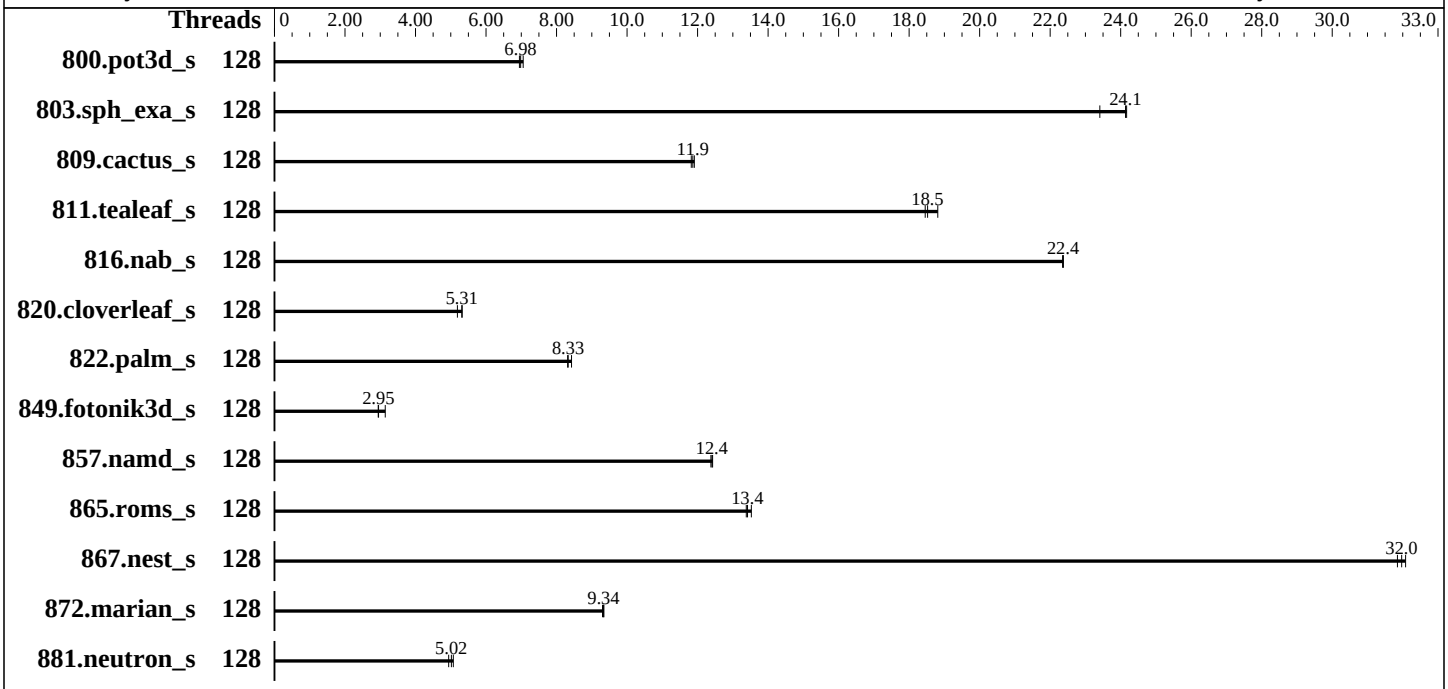
ProLiant Compute DL325 Gen12
(2.70 GHz, AMD EPYC 9755)

SPECspeed®2026_fp_base = 10.8

SPECspeed®2026_fp_peak = 10.8

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

Test Date: Feb-2026
Hardware Availability: Jul-2025
Software Availability: Jan-2026



Hardware

CPU Name:	AMD EPYC 9755
Max MHz:	4100
Nominal:	2700
Enabled:	128 cores, 1 chip, 2 threads/core
Orderable:	1 Chip
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	1 MB I+D on chip per core
L3:	512 MB I+D on chip per chip, 32 MB shared / 8 cores
Other:	None
Memory:	1536 GB (12 x 128 GB 2Rx4 PC5-6400B-R, running at 5200)
Storage:	1 x 1.6 TB NVMe SSD
Cooling:	CLC
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 v1.34 released Nov-2025
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
800.pot3d_s	128	95.4	7.05	96.9	6.95	**96.4**	**6.98**	128	95.4	7.05	96.9	6.95	**96.4**	**6.98**
803.sph_exa_s	128	52.9	23.4	**51.3**	**24.1**	51.2	24.2	128	52.9	23.4	**51.3**	**24.1**	51.2	24.2
809.cactus_s	128	**94.6**	**11.9**	94.2	11.9	94.9	11.8	128	**94.6**	**11.9**	94.2	11.9	94.9	11.8
811.tealeaf_s	128	**30.1**	**18.5**	30.2	18.5	29.6	18.8	128	**30.1**	**18.5**	30.2	18.5	29.6	18.8
816.nab_s	128	50.4	22.4	**50.3**	**22.4**	50.3	22.4	128	50.4	22.4	**50.3**	**22.4**	50.3	22.4
820.cloverleaf_s	128	161	5.32	**161**	**5.31**	165	5.19	128	161	5.32	**161**	**5.31**	165	5.19
822.palm_s	128	**147**	**8.33**	146	8.43	148	8.31	128	**147**	**8.33**	146	8.43	148	8.31
849.fotonik3d_s	128	224	2.94	**224**	**2.95**	210	3.14	128	224	2.94	**224**	**2.95**	210	3.14
857.namd_s	128	117	12.4	117	12.4	**117**	**12.4**	128	117	12.4	117	12.4	**117**	**12.4**
865.roms_s	128	81.5	13.4	80.6	13.5	**81.2**	**13.4**	128	81.5	13.4	80.6	13.5	**81.2**	**13.4**
867.nest_s	128	67.8	31.8	67.3	32.1	**67.6**	**32.0**	128	67.8	31.8	67.3	32.1	**67.6**	**32.0**
872.marian_s	128	116	9.34	**116**	**9.34**	116	9.30	128	116	9.34	**116**	**9.34**	116	9.30
881.neutron_s	128	**162**	**5.02**	161	5.07	165	4.94	128	**162**	**5.02**	161	5.07	165	4.94

SPECspeed®2026_fp_base = 10.8

SPECspeed®2026_fp_peak = 10.8

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 = "0-127"
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
Memory Patrol Scrubbing set to Disabled
ACPI CST C2 Latency set to 18 microseconds
Last-Level Cache (LLC) as NUMA Node set to Enabled
NUMA memory domains per socket set to Four memory domains per socket
Thermal Configuration set to Enhanced CPU 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 01:37:47 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
   01:37:47 up 18 min,  4 users,  load average: 0.00, 0.02, 0.00
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU  WHAT
  admin1            172.16.0.100     01:21   43.00s  0.00s  0.02s sshd: admin1 [priv]
  admin1            172.16.0.100     01:20   43.00s  0.00s  0.01s sshd: admin1 [priv]
  admin1   tty1     -                01:20   16:52   0.05s  0.02s -bash
  admin1            172.16.0.100     01:20   43.00s  0.00s  0.02s sshd: admin1 [priv]

------------------------------------------------------------
```

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Platform Notes (Continued)

```
 3. Username
   From environment variable $USER:  root
   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              6190755
   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 -i
  sudo -i
  -bash
  -bash
  sudo ./run_fpspeed.py
  sudo ./run_fpspeed.py
  python3 ./run_fpspeed.py
  /bin/bash ./amd_speed_aocc510_flang22_znver5_A1.sh
 runcpu --config amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3 fpspeed
 runcpu --configfile amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3
    --nopower --runmode speed --tune base --size test:train:refspeed fpspeed --nopreenv --note-preenv
    --logfile $SPEC/tmp/CPU2026.002/templogs/preenv.fpspeed.002.0.log --lognum 002.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026

------------------------------------------------------------
 6. /proc/cpuinfo
     model name      : AMD EPYC 9755 128-Core Processor
     vendor_id       : AuthenticAMD
     cpu family      : 26
     model           : 2
```

(Continued on next page)

Platform Notes (Continued)

```
     stepping        : 1
     microcode       : 0xb00215a
     bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
     TLB size        : 192 4K pages
     cpu cores       : 128
     siblings        : 256
     1 physical ids (chips)
     256 processors (hardware threads)
     physical id 0: core ids 0-127
     physical id 0: apicids 0-255
   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 9755 128-Core Processor
   BIOS Model name:                    AMD EPYC 9755 128-Core Processor                CPU @ 2.7GHz
   BIOS CPU family:                      107
   CPU family:                           26
   Model:                                2
   Thread(s) per core:                   2
   Core(s) per socket:                   128
   Socket(s):                            1
   Stepping:                             1
   Frequency boost:                      enabled
   CPU(s) scaling MHz:                   101%
   CPU max MHz:                          2700.0000
   CPU min MHz:                          1500.0000
   BogoMIPS:                             5391.35
   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 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
```

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Platform Notes (Continued)

```
                        ibrs ibpb stibp ibrs_enhanced vmmcall fsgsbase tsc_adjust 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 avx_vnni 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 bus_lock_detect
                       movdiri movdir64b overflow_recov succor smca fsrm avx512_vp2intersect
                                 flush_l1d debug_swap
  Virtualization:                  AMD-V
  L1d cache:                       6 MiB (128 instances)
  L1i cache:                       4 MiB (128 instances)
  L2 cache:                        128 MiB (128 instances)
  L3 cache:                        512 MiB (16 instances)
  NUMA node(s):                    16
  NUMA node0 CPU(s):               0-7,128-135
  NUMA node1 CPU(s):               8-15,136-143
  NUMA node2 CPU(s):               16-23,144-151
  NUMA node3 CPU(s):               24-31,152-159
  NUMA node4 CPU(s):               32-39,160-167
  NUMA node5 CPU(s):               40-47,168-175
  NUMA node6 CPU(s):               48-55,176-183
  NUMA node7 CPU(s):               56-63,184-191
  NUMA node8 CPU(s):               64-71,192-199
  NUMA node9 CPU(s):               72-79,200-207
  NUMA node10 CPU(s):              80-87,208-215
  NUMA node11 CPU(s):              88-95,216-223
  NUMA node12 CPU(s):              96-103,224-231
  NUMA node13 CPU(s):              104-111,232-239
  NUMA node14 CPU(s):              112-119,240-247
  NUMA node15 CPU(s):              120-127,248-255
  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:   Not affected
  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
                                        always-on; RSB filling; PBRSB-eIBRS Not affected; BHI Not affected
```

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Platform Notes (Continued)

```
  Vulnerability Srbds:                 Not affected
  Vulnerability Tsx async abort:       Not affected
  Vulnerability Vmscape:               Not affected

From lscpu --cache:
     NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
     L1d       48K       6M   12 Data            1    64        1             64
     L1i       32K       4M    8 Instruction     1    64        1             64
     L2         1M     128M   16 Unified         2  1024        1             64
     L3        32M     512M   16 Unified         3 32768        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 16 nodes (0-15)
  node 0 cpus: 0-7,128-135
  node 0 size: 96447 MB
  node 0 free: 95922 MB
  node 1 cpus: 8-15,136-143
  node 1 size: 96762 MB
  node 1 free: 96536 MB
  node 2 cpus: 16-23,144-151
  node 2 size: 96762 MB
  node 2 free: 96580 MB
  node 3 cpus: 24-31,152-159
  node 3 size: 96762 MB
  node 3 free: 96583 MB
  node 4 cpus: 32-39,160-167
  node 4 size: 96762 MB
  node 4 free: 96298 MB
  node 5 cpus: 40-47,168-175
  node 5 size: 96762 MB
  node 5 free: 96398 MB
  node 6 cpus: 48-55,176-183
  node 6 size: 96762 MB
  node 6 free: 96486 MB
  node 7 cpus: 56-63,184-191
  node 7 size: 96762 MB
  node 7 free: 96517 MB
  node 8 cpus: 64-71,192-199
  node 8 size: 96762 MB
  node 8 free: 96602 MB
  node 9 cpus: 72-79,200-207
  node 9 size: 96762 MB
  node 9 free: 96563 MB
  node 10 cpus: 80-87,208-215
  node 10 size: 96762 MB
```

(Continued on next page)

Platform Notes (Continued)

```
   node 10 free: 96577 MB
   node 11 cpus: 88-95,216-223
   node 11 size: 96762 MB
   node 11 free: 96599 MB
   node 12 cpus: 96-103,224-231
   node 12 size: 96762 MB
   node 12 free: 96591 MB
   node 13 cpus: 104-111,232-239
   node 13 size: 96762 MB
   node 13 free: 96549 MB
   node 14 cpus: 112-119,240-247
   node 14 size: 96762 MB
   node 14 free: 96575 MB
   node 15 cpus: 120-127,248-255
   node 15 size: 96648 MB
   node 15 free: 96401 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  12  12  12  12  12  12  12  12  12  12  12  12
     1:  11  10  11  11  12  12  12  12  12  12  12  12  12  12  12  12
     2:  11  11  10  11  12  12  12  12  12  12  12  12  12  12  12  12
     3:  11  11  11  10  12  12  12  12  12  12  12  12  12  12  12  12
     4:  12  12  12  12  10  11  11  11  12  12  12  12  12  12  12  12
     5:  12  12  12  12  11  10  11  11  12  12  12  12  12  12  12  12
     6:  12  12  12  12  11  11  10  11  12  12  12  12  12  12  12  12
     7:  12  12  12  12  11  11  11  10  12  12  12  12  12  12  12  12
     8:  12  12  12  12  12  12  12  12  10  11  11  11  12  12  12  12
     9:  12  12  12  12  12  12  12  12  11  10  11  11  12  12  12  12
    10:  12  12  12  12  12  12  12  12  11  11  10  11  12  12  12  12
    11:  12  12  12  12  12  12  12  12  11  11  11  10  12  12  12  12
    12:  12  12  12  12  12  12  12  12  12  12  12  12  10  11  11  11
    13:  12  12  12  12  12  12  12  12  12  12  12  12  11  10  11  11
    14:  12  12  12  12  12  12  12  12  12  12  12  12  11  11  10  11
    15:  12  12  12  12  12  12  12  12  12  12  12  12  11  11  11  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1584915352 kB

------------------------------------------------------------
10. who -r
  run-level 5 Feb 6 01:20

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

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
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
  BOOT_IMAGE=/boot/vmlinuz-6.8.0-94-generic
  root=UUID=55095485-7cab-4cdb-a7f6-908dc16f7253
  ro

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 60:
    current policy: frequency should be within 1.50 GHz and 2.70 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:  2700MHz

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

------------------------------------------------------------
16. sysctl
  kernel.numa_balancing               1
```

(Continued on next page)

Platform Notes (Continued)

```
  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
  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/nvme0n1p2 ext4  1.5T   33G  1.4T   3% /
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         HPE
    Product:        HPE ProLiant Compute DL325 Gen12
    Product Family: ProLiant
    Serial:         OU2MZL2EWE

------------------------------------------------------------
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:
     4x Samsung M321RAJA0MB2-CCPEC 128 GB 2 rank 6400, configured at 5200
     6x Samsung M321RAJA0MB2-CCPKC 128 GB 2 rank 6400, configured at 5200
     2x Samsung M321RAJA0MB2-CCPPC 128 GB 2 rank 6400, configured at 5200


------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       HPE
   BIOS Version:      1.34
   BIOS Date:         11/28/2025
   BIOS Revision:     1.34
   Firmware Revision: 1.18
```

Compiler Version Notes

```
==============================================================================
C       | 811.tealeaf_s(base) 816.nab_s(base) 881.neutron_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++     | 803.sph_exa_s(base) 857.namd_s(base) 867.nest_s(base)
        | 872.marian_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
```

(Continued on next page)

Compiler Version Notes (Continued)

```
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------

==============================================================================
C++, C  | 809.cactus_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
------------------------------------------------------------------------------

==============================================================================
Fortran | 800.pot3d_s(base) 820.cloverleaf_s(base) 822.palm_s(base)
        | 849.fotonik3d_s(base) 865.roms_s(base)
------------------------------------------------------------------------------
flang version 22.1.0-rc2 (https://github.com/llvm/llvm-project
  a47b42eb9f9b302167b4fc413e6c92798d65dd0b)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/llvm/llvm-22.1.0-rc2/install/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang-22

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

Base Portability Flags

800.pot3d_s: -DSPEC_LP64
803.sph_exa_s: -DSPEC_LP64
809.cactus_s: -DSPEC_LP64
811.tealeaf_s: -DSPEC_LP64

(Continued on next page)

Base Portability Flags (Continued)

816.nab_s: -DSPEC_LP64
820.cloverleaf_s: -DSPEC_LP64
822.palm_s: -DSPEC_LP64
849.fotonik3d_s: -DSPEC_LP64
857.namd_s: -DSPEC_LP64
865.roms_s: -DSPEC_LP64
867.nest_s: -fno-finite-math-only -DSPEC_LP64
872.marian_s: -DSPEC_LP64
881.neutron_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 -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50 -zopt
-mrecip=none -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 -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt -fopenmp -DSPEC_OPENMP
-pthread -lamdalloc -lamdlibm -fopenmp=libomp -lomp

Fortran benchmarks:
-m64 -std=f2018 -O3 -flto -march=znver5 -fveclib=AMDLIBM
-ffast-math -funroll-loops -DSPEC_OPENMP -fopenmp
-fdo-concurrent-to-openmp=host -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
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50 -zopt
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000
-mrecip=none -fopenmp -DSPEC_OPENMP -pthread -lamdalloc -lamdlibm
-fopenmp=libomp -lomp

Base Other Flags

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

Benchmarks using both C and C++:
`-Wno-return-type -Wno-unused-command-line-argument`

Peak Optimization Flags

C benchmarks:

811.tealeaf_s: `basepeak = yes`

816.nab_s: `basepeak = yes`

881.neutron_s: `basepeak = yes`

C++ benchmarks:

803.sph_exa_s: `basepeak = yes`

857.namd_s: `basepeak = yes`

867.nest_s: `basepeak = yes`

872.marian_s: `basepeak = yes`

Fortran benchmarks:

800.pot3d_s: `basepeak = yes`

820.cloverleaf_s: `basepeak = yes`

822.palm_s: `basepeak = yes`

849.fotonik3d_s: `basepeak = yes`

865.roms_s: `basepeak = yes`

Benchmarks using both C and C++:

809.cactus_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.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.xml

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

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