SPEC CPU®2026 Floating Point Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

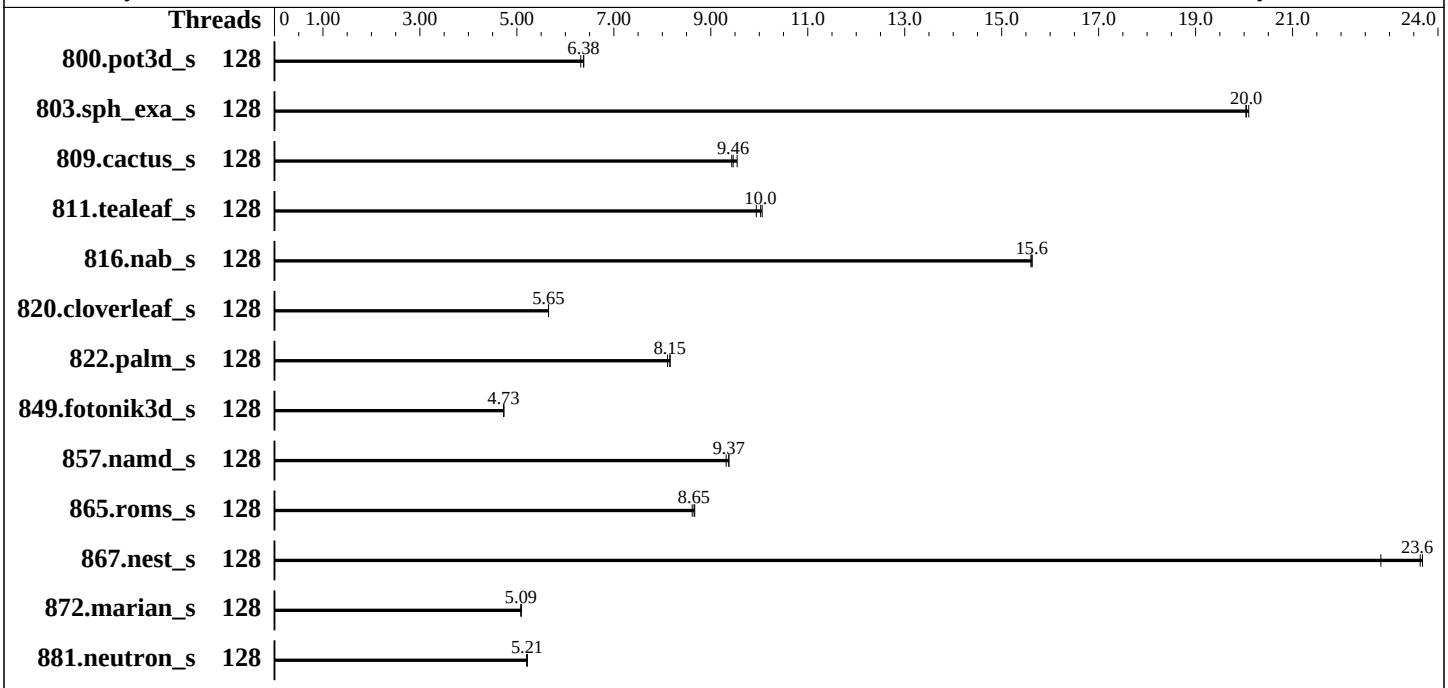
ProLiant DL325 Gen11
(2.25 GHz, AMD EPYC 9754)

SPECspeed®2026_fp_base = 8.87

SPECspeed®2026_fp_peak = 8.87

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

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



Hardware

CPU Name:	AMD EPYC 9754
Max MHz:	3100
Nominal:	2250
Enabled:	128 cores, 1 chip
Orderable:	1 Chip
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:	768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
Storage:	1 x 480 GB NVMe SSD
Cooling:	CLC
Other:	None

Software

OS:	Ubuntu 24.04.3 LTS Kernel 6.8.0-90-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 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	107	6.32	106	6.38	**106**	**6.38**	128	107	6.32	106	6.38	**106**	**6.38**
803.sph_exa_s	128	61.6	20.1	61.8	20.0	**61.8**	**20.0**	128	61.6	20.1	61.8	20.0	**61.8**	**20.0**
809.cactus_s	128	**119**	**9.46**	118	9.54	119	9.43	128	**119**	**9.46**	118	9.54	119	9.43
811.tealeaf_s	128	**55.5**	**10.0**	56.0	9.94	55.4	10.1	128	**55.5**	**10.0**	56.0	9.94	55.4	10.1
816.nab_s	128	**72.1**	**15.6**	72.1	15.6	72.2	15.6	128	**72.1**	**15.6**	72.1	15.6	72.2	15.6
820.cloverleaf_s	128	152	5.65	152	5.65	**152**	**5.65**	128	152	5.65	152	5.65	**152**	**5.65**
822.palm_s	128	151	8.11	150	8.16	**151**	**8.15**	128	151	8.11	150	8.16	**151**	**8.15**
849.fotonik3d_s	128	**140**	**4.73**	139	4.73	140	4.72	128	**140**	**4.73**	139	4.73	140	4.72
857.namd_s	128	156	9.32	155	9.37	**155**	**9.37**	128	156	9.32	155	9.37	**155**	**9.37**
865.roms_s	128	**126**	**8.65**	126	8.62	126	8.67	128	**126**	**8.65**	126	8.62	126	8.67
867.nest_s	128	91.2	23.7	94.6	22.8	**91.4**	**23.6**	128	91.2	23.7	94.6	22.8	**91.4**	**23.6**
872.marian_s	128	**213**	**5.09**	213	5.09	213	5.08	128	**213**	**5.09**	213	5.09	213	5.08
881.neutron_s	128	**156**	**5.21**	156	5.22	157	5.20	128	**156**	**5.21**	156	5.22	157	5.20

SPECspeed®2026_fp_base = 8.87

SPECspeed®2026_fp_peak = 8.87

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
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
Memory Patrol Scrubbing set to Disabled
ACPI CST C2 Latency set to 18 microseconds
Thermal Configuration set to Maximum Cooling

 Sysinfo program /home/cpu2026/bin/sysinfo
 Rev: 069f95da7e7f5d81b2ce48a82150e54f
 running on admin1 Fri Feb  6 02:02:00 2026
```

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Platform Notes (Continued)

```
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 6.8.0-90-generic #91-Ubuntu SMP PREEMPT_DYNAMIC Tue Nov 18 14:14:30 UTC 2025 x86_64

------------------------------------------------------------
2. w
   02:02:00 up 38 min,  4 users,  load average: 0.02, 0.04, 0.01
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU  WHAT
  admin1            172.16.0.100     01:58   21.00s  0.00s  0.02s sshd: admin1 [priv]
  admin1            172.16.0.100     01:46   21.00s  0.00s  0.01s sshd: admin1 [priv]
  admin1            172.16.0.100     01:46   21.00s  0.00s  0.02s sshd: admin1 [priv]
  admin1   tty1     -                01:31   30:47   0.07s  0.01s -bash

------------------------------------------------------------
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              3094437
  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
 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/CPU2026.001/templogs/preenv.fpspeed.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
    cpu cores       : 128
```

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Platform Notes (Continued)

```
     siblings        : 128
     1 physical ids (chips)
     128 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 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
   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):                               128
   On-line CPU(s) list:                  0-127
   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):                            1
   Stepping:                             1
   BogoMIPS:                             4493.33
   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
                                      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
```

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Platform Notes (Continued)

```
                                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:                             4 MiB (128 instances)
  L1i cache:                             4 MiB (128 instances)
  L2 cache:                              128 MiB (128 instances)
  L3 cache:                              256 MiB (16 instances)
  NUMA node(s):                          16
  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 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
```

(Continued on next page)

Platform Notes (Continued)

```
      L1d       32K       4M    8 Data            1    64        1             64
      L1i       32K       4M    8 Instruction     1    64        1             64
      L2         1M     128M    8 Unified         2  2048        1             64
      L3        16M     256M   16 Unified         3 16384        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
  node 0 size: 48066 MB
  node 0 free: 47378 MB
  node 1 cpus: 8-15
  node 1 size: 48381 MB
  node 1 free: 48272 MB
  node 2 cpus: 16-23
  node 2 size: 48381 MB
  node 2 free: 48256 MB
  node 3 cpus: 24-31
  node 3 size: 48381 MB
  node 3 free: 48096 MB
  node 4 cpus: 32-39
  node 4 size: 48381 MB
  node 4 free: 48170 MB
  node 5 cpus: 40-47
  node 5 size: 48381 MB
  node 5 free: 48257 MB
  node 6 cpus: 48-55
  node 6 size: 48381 MB
  node 6 free: 48174 MB
  node 7 cpus: 56-63
  node 7 size: 48381 MB
  node 7 free: 48244 MB
  node 8 cpus: 64-71
  node 8 size: 48337 MB
  node 8 free: 48201 MB
  node 9 cpus: 72-79
  node 9 size: 48381 MB
  node 9 free: 48269 MB
  node 10 cpus: 80-87
  node 10 size: 48381 MB
  node 10 free: 48258 MB
  node 11 cpus: 88-95
  node 11 size: 48330 MB
  node 11 free: 48206 MB
  node 12 cpus: 96-103
  node 12 size: 48381 MB
```

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Platform Notes (Continued)

```
  node 12 free: 48240 MB
  node 13 cpus: 104-111
  node 13 size: 48381 MB
  node 13 free: 48131 MB
  node 14 cpus: 112-119
  node 14 size: 48381 MB
  node 14 free: 48212 MB
  node 15 cpus: 120-127
  node 15 size: 48381 MB
  node 15 free: 48146 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  11  11  11  11  11  11  11  11
    1:  11  10  11  11  11  11  11  11  11  11  11  11  11  11  11  11
    2:  11  11  10  11  11  11  11  11  11  11  11  11  11  11  11  11
    3:  11  11  11  10  11  11  11  11  11  11  11  11  11  11  11  11
    4:  11  11  11  11  10  11  11  11  11  11  11  11  11  11  11  11
    5:  11  11  11  11  11  10  11  11  11  11  11  11  11  11  11  11
    6:  11  11  11  11  11  11  10  11  11  11  11  11  11  11  11  11
    7:  11  11  11  11  11  11  11  10  11  11  11  11  11  11  11  11
    8:  11  11  11  11  11  11  11  11  10  11  11  11  11  11  11  11
    9:  11  11  11  11  11  11  11  11  11  10  11  11  11  11  11  11
   10:  11  11  11  11  11  11  11  11  11  11  10  11  11  11  11  11
   11:  11  11  11  11  11  11  11  11  11  11  11  10  11  11  11  11
   12:  11  11  11  11  11  11  11  11  11  11  11  11  10  11  11  11
   13:  11  11  11  11  11  11  11  11  11  11  11  11  11  10  11  11
   14:  11  11  11  11  11  11  11  11  11  11  11  11  11  11  10  11
   15:  11  11  11  11  11  11  11  11  11  11  11  11  11  11  11  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       792257740 kB

------------------------------------------------------------
10. who -r
  run-level 5 Feb 6 01:23

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

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Platform Notes (Continued)

```
                    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-6.8.0-90-generic
  root=UUID=c8895b10-3344-47fb-81a4-2b6fb85bbd20
  ro

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 17:
    Unable to determine current policy
    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
```

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Platform Notes (Continued)

```
  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  438G   93G  324G  23% /

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         HPE
    Product:        ProLiant DL325 Gen11
    Product Family: ProLiant
    Serial:         DL325G11-008

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

(Continued on next page)

Platform Notes (Continued)

```
 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:
      3x Hynix HMCG94AEBRA103N 64 GB 2 rank 4800
      1x Hynix HMCG94AEBRA123N 64 GB 2 rank 4800
      8x Hynix HMCG94MEBRA121N 64 GB 2 rank 4800


 ------------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       HPE
    BIOS Version:      2.90
    BIOS Date:         01/09/2026
    BIOS Revision:     2.90
    Firmware Revision: 1.70
```

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
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
```

(Continued on next page)

Compiler Version Notes (Continued)

```
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
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

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Base Portability Flags (Continued)

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
```

(Continued on next page)

Base Other Flags (Continued)

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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