SPEC CPU®2026 Floating Point Speed Result

Hewlett Packard Enterprise

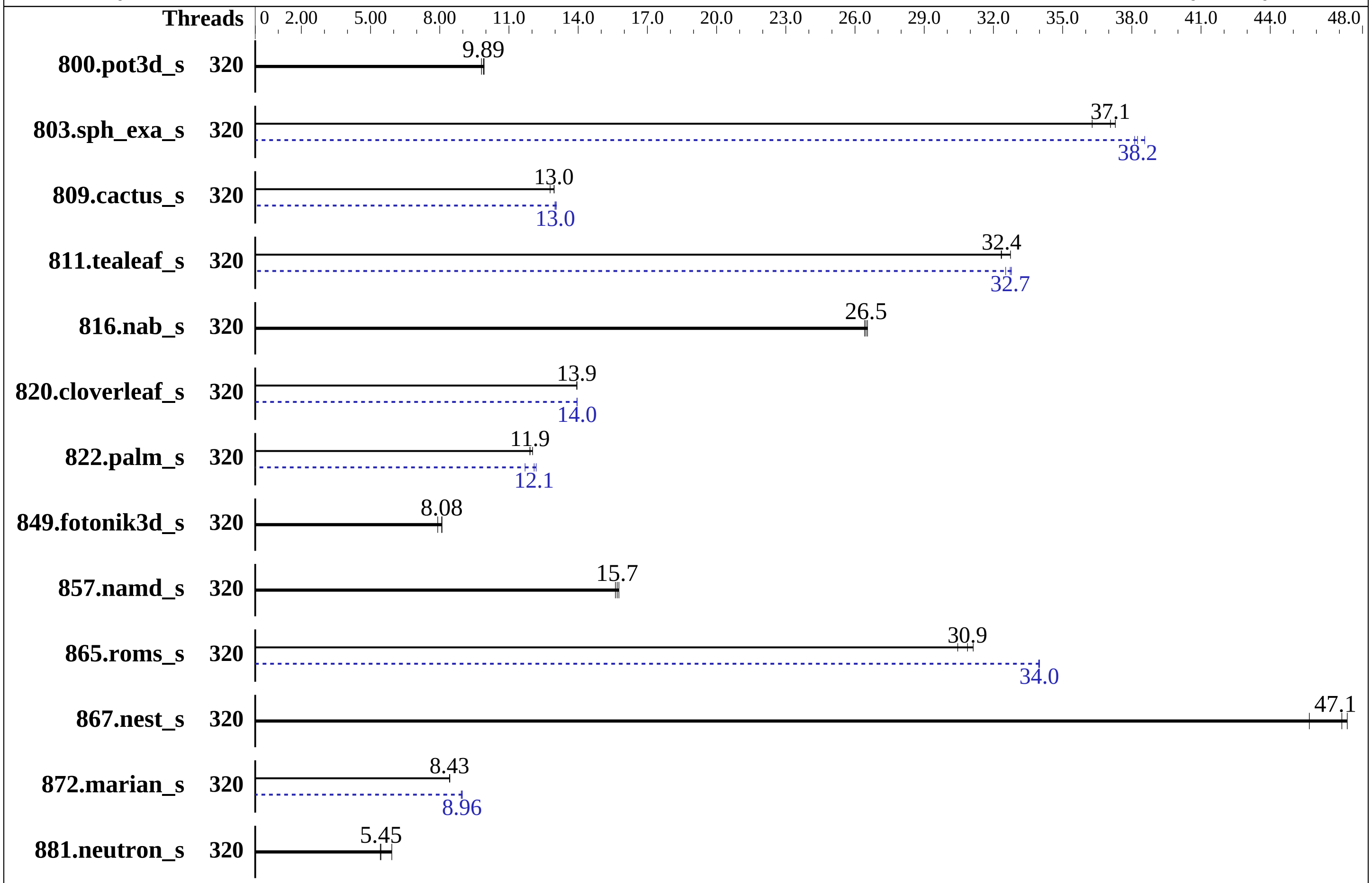
(Test Sponsor: HPE)

ProLiant DL365 Gen11
(2.10 GHz, AMD EPYC 9845)

SPECspeed®2026_fp_base = 16.3

SPECspeed®2026_fp_peak = 16.6

CPU2026 License:	3	**Test Date:**	Sep-2026
Test Sponsor:	HPE	**Hardware Availability:**	Oct-2024
Tested by:	HPE	**Software Availability:**	May-2026



Hardware

CPU Name:	AMD EPYC 9845
Max MHz:	3700
Nominal:	2100
Enabled:	320 cores, 2 chips
Orderable:	1,2 Chips
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	1 MB I+D on chip per core
L3:	320 MB I+D on chip per chip, 32 MB shared / 16 cores
Other:	None
Memory:	1536 GB (24 x 64 GB 2Rx4 PC5-6400B-R)
Storage:	1 x 480 GB NVMe SSD
Cooling:	Air
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP7 Kernel 6.4.0-150700.53.6-default
Compiler:	C/C++: Version 5.2.0 of AOCC Fortran: Flang v22
Compiler Category:	Vendor
Firmware:	HPE BIOS Version v3.22 08/20/2026 released Aug-2026
File System:	btrfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other:	None
Power Management:	BIOS set to prefer performance at the cost of additional power usage

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
800.pot3d_s	320	67.8	9.92	68.6	9.81	**68.0**	**9.89**	320	67.8	9.92	68.6	9.81	**68.0**	**9.89**
803.sph_exa_s	320	**33.4**	**37.1**	34.1	36.3	33.2	37.3	320	**32.4**	**38.2**	32.1	38.6	32.5	38.1
809.cactus_s	320	86.6	13.0	**86.6**	**13.0**	87.8	12.8	320	86.3	13.0	85.9	13.1	**86.2**	**13.0**
811.tealeaf_s	320	17.0	32.7	17.2	32.3	**17.2**	**32.4**	320	**17.0**	**32.7**	17.0	32.8	17.1	32.5
816.nab_s	320	42.4	26.5	**42.5**	**26.5**	42.6	26.4	320	42.4	26.5	**42.5**	**26.5**	42.6	26.4
820.cloverleaf_s	320	**61.5**	**13.9**	61.5	13.9	61.4	13.9	320	**61.4**	**14.0**	61.4	14.0	61.4	13.9
822.palm_s	320	**103**	**11.9**	102	12.0	103	11.9	320	**102**	**12.1**	101	12.2	105	11.7
849.fotonik3d_s	320	**81.7**	**8.08**	83.4	7.91	81.5	8.10	320	**81.7**	**8.08**	83.4	7.91	81.5	8.10
857.namd_s	320	**92.5**	**15.7**	92.1	15.8	93.0	15.6	320	**92.5**	**15.7**	92.1	15.8	93.0	15.6
865.roms_s	320	35.0	31.1	**35.3**	**30.9**	35.8	30.5	320	**32.1**	**34.0**	32.1	34.0	32.1	34.0
867.nest_s	320	45.6	47.3	**45.9**	**47.1**	47.3	45.7	320	45.6	47.3	**45.9**	**47.1**	47.3	45.7
872.marian_s	320	**128**	**8.43**	128	8.42	128	8.44	320	**121**	**8.96**	121	8.98	121	8.93
881.neutron_s	320	150	5.42	138	5.92	**150**	**5.45**	320	150	5.42	138	5.92	**150**	**5.45**

SPECspeed®2026_fp_base = 16.3

SPECspeed®2026_fp_peak = 16.6

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

```
The AMD64 AOCC Compiler Suite is available at
http://developer.amd.com/amd-aocc/
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 --physcpubind=0-15 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,
```

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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.

To disable Transparent Hugepages (THP) for 816.nab_s,865.roms_s=peak:
'echo never > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo never > /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 = "0-319"
LD_LIBRARY_PATH =
     "/home/cpu2026/amd_speed_aocc520_znver5_A_lib/lib:/home/cpu2026/amd_spee
     d_aocc520_znver5_A_lib/lib32:"
MALLOC_CONF = "retain:true"
OMP_THREAD_LIMIT = "320"
```

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
ACPI CST C2 Latency set to 18 microseconds
AMD SMT Option set to Disabled
Thermal Configuration set to Maximum Cooling
```

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Platform Notes (Continued)

```
Sysinfo program /home/cpu2026/bin/sysinfo
Rev: 779ab21020787073335a329f3a45e2cd
running on localhost Sun Sep 13 02:19:36 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 254 (254.27+suse.167.g130293e510)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -srvm
   Linux 6.4.0-150700.53.6-default #1 SMP PREEMPT_DYNAMIC Tue Jul  1 14:54:47 UTC 2025 (8ab7501) x86_64

------------------------------------------------------------
2. w
   02:19:36 up 32 min,  1 user,  load average: 0.06, 0.38, 0.91
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     pts/0    172.16.0.100     01:49   32.00s  0.08s  0.00s /bin/bash ./run_fpspeed_sh.sh
  root     pts/1    172.16.0.100     02:19   30.00s  1.25s  0.18s python3 ./run_fpspeed.py

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

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Platform Notes (Continued)

```
------------------------------------------------------------
4. ulimit -a
  core file size          (blocks, -c) 0
  data seg size           (kbytes, -d) unlimited
  scheduling priority             (-e) 0
  file size               (blocks, -f) unlimited
  pending signals                 (-i) 6190370
  max locked memory       (kbytes, -l) 2048
  max memory size         (kbytes, -m) unlimited
  open files                      (-n) 1024
  pipe size            (512 bytes, -p) 8
  POSIX message queues     (bytes, -q) 819200
  real-time priority              (-r) 0
  stack size              (kbytes, -s) unlimited
  cpu time               (seconds, -t) unlimited
  max user processes              (-u) 6190370
  virtual memory          (kbytes, -v) unlimited
  file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=42
 sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
 sshd: root [priv]
 sshd: root@pts/0
 -bash
 /bin/bash ./run_fpspeed_sh.sh
 sudo ./run_fpspeed.py
 sudo ./run_fpspeed.py
 python3 ./run_fpspeed.py
 runcpu --config amd_speed_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 fpspeed
 runcpu --configfile amd_speed_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode speed --tune base:peak --size test:train:refspeed fpspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2026.003/templogs/preenv.fpspeed.003.0.log --lognum 003.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9845 160-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 26
    model           : 17
    stepping        : 0
    microcode       : 0xb101066
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso
```

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Platform Notes (Continued)

```
    TLB size        : 192 4K pages
    cpu cores       : 160
    siblings        : 160
    2 physical ids (chips)
    320 processors (hardware threads)
    physical id 0: core ids 0-159
    physical id 1: core ids 0-159
    physical id 0: apicids 0-159
    physical id 1: apicids 256-415
  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 2.40.4:
   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):                                  320
   On-line CPU(s) list:                     0-319
   Vendor ID:                               AuthenticAMD
   Model name:                              AMD EPYC 9845 160-Core Processor
   CPU family:                              26
   Model:                                   17
   Thread(s) per core:                      1
   Core(s) per socket:                      160
   Socket(s):                               2
   Stepping:                                0
   BogoMIPS:                                4193.78
   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 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
```

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Platform Notes (Continued)

```
                                        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 hv_inuse_wr_allowed
                                        srso_user_kernel_no amd_lbr_pmc_freeze
  Virtualization:                       AMD-V
  L1d cache:                            15 MiB (320 instances)
  L1i cache:                            10 MiB (320 instances)
  L2 cache:                             320 MiB (320 instances)
  L3 cache:                             640 MiB (20 instances)
  NUMA node(s):                         2
  NUMA node0 CPU(s):                    0-159
  NUMA node1 CPU(s):                    160-319
  Vulnerability Gather data sampling:   Not affected
  Vulnerability Indirect target selection: 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; IBPB on VMEXIT only
  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; PBRSB-eIBRS Not affected; BHI Not affected
  Vulnerability Srbds:                  Not affected
  Vulnerability Tsx async abort:        Not affected

From lscpu --cache:
     NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
     L1d       48K      15M   12 Data            1    64        1             64
     L1i       32K      10M    8 Instruction     1    64        1             64
     L2         1M     320M   16 Unified         2  1024        1             64
     L3        32M     640M   16 Unified         3 32768        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0-159
  node 0 size: 773683 MB
  node 0 free: 772040 MB
  node 1 cpus: 160-319
```

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Platform Notes (Continued)

```
  node 1 size: 773938 MB
  node 1 free: 772833 MB
  node distances:
  node   0   1
    0:  10  32
    1:  32  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1584764864 kB

------------------------------------------------------------
10. who -r
  run-level 3 Sep 13 01:47

------------------------------------------------------------
11. Systemd service manager version: systemd 254 (254.27+suse.167.g130293e510)
  Default Target  Status
  multi-user      running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          ModemManager YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd
                   bluetooth cron display-manager getty@ irqbalance issue-generator kbdsettings klog
                   lvm2-monitor nscd postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked
                   wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny wpa_supplicant
  enabled-runtime  systemd-remount-fs
  disabled         NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon autofs
                   autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates
                   chrony-wait chronyd console-getty cups cups-browsed debug-shell dnsmasq ebtables
                   exchange-bmc-os-info firewalld fsidd gnome-remote-desktop gpm grub2-once haveged
                   hwloc-dump-hwdata ipmi ipmievd issue-add-ssh-keys kexec-load lunmask man-db-create
                   multipathd nfs nfs-blkmap nmb openvpn@ ostree-remount ostree-state-overlay@ rpcbind
                   rpmconfigcheck rsyncd rtkit-daemon samba-bgqd serial-getty@ smartd_generate_opts smb snmpd
                   snmptrapd speech-dispatcherd systemd-boot-check-no-failures systemd-confext
                   systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
                   udisks2 update-system-flatpaks upower vncserver@ wpa_supplicant@
  indirect         pcscd saned@ systemd-userdbd wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.53.6-default
  root=UUID=6864fa16-4e3a-4b5d-82dd-678b06e3a35e
  splash=silent
  mitigations=auto
  quiet
```

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Platform Notes (Continued)

```
  security=apparmor

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 17:
    Unable to determine current policy
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. 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

------------------------------------------------------------
16. /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

------------------------------------------------------------
17. /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
```

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Platform Notes (Continued)

```
    scan_sleep_millisecs    10000

  ------------------------------------------------------------
  18. OS release
    From /etc/*-release /etc/*-version
    os-release SUSE Linux Enterprise Server 15 SP7

  ------------------------------------------------------------
  19. Disk information
  SPEC is set to: /home/cpu2026
    Filesystem     Type   Size  Used Avail Use% Mounted on
    /dev/sda2      btrfs  447G   36G  408G   8% /home

  ------------------------------------------------------------
  20. /sys/devices/virtual/dmi/id
      Vendor:         HPE
      Product:        ProLiant DL365 Gen11
      Product Family: ProLiant
      Serial:         DL365G11-001

  ------------------------------------------------------------
  21. dmidecode
    Additional information from dmidecode 3.6 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:
      8x Hynix HMCG94AHBRA480N 64 GB 2 rank 6400
      1x Micron MTC40F2046S1RC64BD2 MWFF 64 GB 2 rank 6400
      15x Micron MTC40F2046S1RC64BD2 QSFF 64 GB 2 rank 6400


  ------------------------------------------------------------
  22. BIOS
  (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:       HPE
     BIOS Version:      3.22
     BIOS Date:         08/20/2026
     BIOS Revision:     3.22
     Firmware Revision: 1.79
```

Compiler Version Notes

```
==============================================================================
C        | 811.tealeaf_s(base, peak) 816.nab_s(base, peak) 881.neutron_s(base,
         | peak)
```

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Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.2.0-Build#2035 2026_04_10)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.2.0-4925-2035/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 803.sph_exa_s(base, peak) 857.namd_s(base, peak) 867.nest_s(base,
        | peak) 872.marian_s(base, peak)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.2.0-Build#2035 2026_04_10)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.2.0-4925-2035/bin
------------------------------------------------------------------------------

==============================================================================
C++, C  | 809.cactus_s(base, peak)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.2.0-Build#2035 2026_04_10)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.2.0-4925-2035/bin
------------------------------------------------------------------------------

==============================================================================
Fortran | 800.pot3d_s(base, peak) 820.cloverleaf_s(base, peak)
        | 822.palm_s(base, peak) 849.fotonik3d_s(base, peak) 865.roms_s(base,
        | peak)
------------------------------------------------------------------------------
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++

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Base Compiler Invocation (Continued)

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`
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
```

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Base Optimization Flags (Continued)

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 Compiler Invocation

C benchmarks:
```
clang
```

C++ benchmarks:
```
clang++
```

Fortran benchmarks:
```
 flang-22
```

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

811.tealeaf_s: -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 -fopenmp -DSPEC_OPENMP
-lamdalloc -lamdlibm -fopenmp=libomp -lomp

816.nab_s: basepeak = yes

881.neutron_s: basepeak = yes

C++ benchmarks:

803.sph_exa_s: -m64 -std=c++17
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-fprofile-instr-generate(pass 1)
-fprofile-instr-use(pass 2) -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=100 -fopenmp -DSPEC_OPENMP
-pthread -lamdalloc -lamdlibm -fopenmp=libomp -lomp

857.namd_s: basepeak = yes

867.nest_s: basepeak = yes

872.marian_s: Same as 803.sph_exa_s

Fortran benchmarks:

800.pot3d_s: basepeak = yes

820.cloverleaf_s: -m64 -std=f2018 -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -funroll-loops

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Peak Optimization Flags (Continued)

820.cloverleaf_s (continued):
-DSPEC_OPENMP -fopenmp -fdo-concurrent-to-openmp=host
-lamdalloc -lamdlibm -fopenmp=libomp -lomp

822.palm_s: Same as 820.cloverleaf_s

849.fotonik3d_s: basepeak = yes

865.roms_s: Same as 820.cloverleaf_s

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
-mllvm -unroll-threshold=100 -fopenmp -DSPEC_OPENMP -pthread
-lamdalloc -lamdlibm -fopenmp=libomp -lomp

Peak Other Flags

C benchmarks (except as noted below):
-Wno-return-type -Wno-unused-command-line-argument

811.tealeaf_s: -Wno-return-type

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

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-10-07.00.html
http://www.spec.org/cpu2026/results/flags/HPE-Platform-Flags-AMD-Turin-rev1.12.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-10-07.00.xml
http://www.spec.org/cpu2026/results/flags/HPE-Platform-Flags-AMD-Turin-rev1.12.xml

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

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