SPEC CPU®2026 Floating Point Speed Result

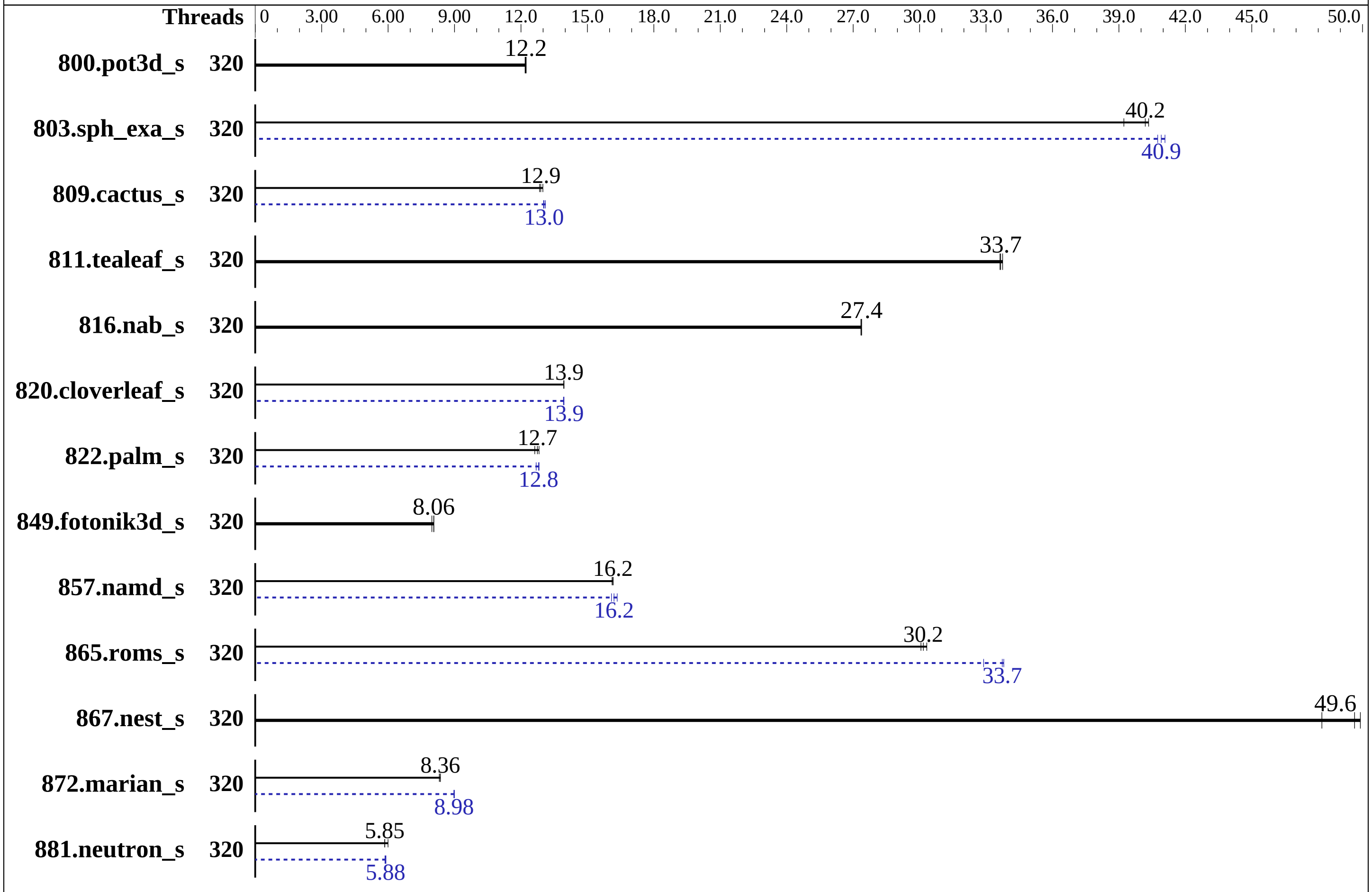
Compal Electronics, Inc.

SR224-2A
AMD EPYC 9845

SPECspeed®2026_fp_base = 17.0

SPECspeed®2026_fp_peak = 17.3

CPU2026 License:	6857	**Test Date:**	Sep-2026
Test Sponsor:	Compal Electronics, Inc.	**Hardware Availability:**	Jul-2025
Tested by:	Compal Electronics, Inc.	**Software Availability:**	May-2026



Hardware

CPU Name:	AMD EPYC 9845
Max MHz:	3700
Nominal:	2100
Enabled:	320 cores, 2 chips, 2 threads/core
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 2Rx8 PC5-6400B-R)
Storage:	1 x 3.84TB M.2 NVMe SSD
Cooling:	Air
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP7 kernel version 6.4.0-150700.51-default
Compiler:	C/C++: Version 5.2.0 of AOCC Fortran: Flang v22
Compiler Category:	Vendor
Firmware:	American Megatrends Version 10.28.00 released Jan-2026
File System:	btrfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	64-bit
Other:	None
Power Management:	BIOS and OS set to prefer performance at the cost of additional power usage

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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	320	55.2	12.2	55.0	12.2	**55.1**	**12.2**	320	55.2	12.2	55.0	12.2	**55.1**	**12.2**
803.sph_exa_s	320	30.7	40.3	**30.8**	**40.2**	31.6	39.2	320	30.1	41.1	**30.3**	**40.9**	30.4	40.8
809.cactus_s	320	**87.0**	**12.9**	86.4	13.0	87.4	12.8	320	**86.0**	**13.0**	85.6	13.1	86.2	13.0
811.tealeaf_s	320	16.5	33.8	16.6	33.6	**16.5**	**33.7**	320	16.5	33.8	16.6	33.6	**16.5**	**33.7**
816.nab_s	320	41.2	27.3	**41.1**	**27.4**	41.1	27.4	320	41.2	27.3	**41.1**	**27.4**	41.1	27.4
820.cloverleaf_s	320	61.5	13.9	**61.5**	**13.9**	61.5	13.9	320	61.6	13.9	61.5	13.9	**61.5**	**13.9**
822.palm_s	320	97.3	12.6	95.8	12.8	**96.4**	**12.7**	320	**96.0**	**12.8**	95.8	12.8	96.8	12.7
849.fotonik3d_s	320	82.7	7.98	**81.9**	**8.06**	81.8	8.07	320	82.7	7.98	**81.9**	**8.06**	81.8	8.07
857.namd_s	320	**89.9**	**16.2**	90.1	16.1	89.8	16.2	320	88.8	16.3	90.3	16.1	**89.6**	**16.2**
865.roms_s	320	**36.1**	**30.2**	35.9	30.3	36.3	30.1	320	32.2	33.8	33.1	32.9	**32.3**	**33.7**
867.nest_s	320	43.3	49.9	44.8	48.2	**43.5**	**49.6**	320	43.3	49.9	44.8	48.2	**43.5**	**49.6**
872.marian_s	320	129	8.36	**129**	**8.36**	130	8.31	320	120	9.00	**120**	**8.98**	121	8.97
881.neutron_s	320	**139**	**5.85**	136	6.00	139	5.85	320	139	5.86	138	5.90	**139**	**5.88**

SPECspeed®2026_fp_base = **17.0**

SPECspeed®2026_fp_peak = **17.3**

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,
```

(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.

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 = "0-639"
LD_LIBRARY_PATH =
     "/cpu2026/amd_speed_aocc520_znver5_A_lib/lib:/cpu2026/amd_speed_aocc520_
     znver5_A_lib/lib32:"
MALLOC_CONF = "retain:true"
OMP_THREAD_LIMIT = "640"
```

General Notes

```
Binaries were compiled on a system with an AMD EPYC 9754 CPU + 768 GiB Memory using Ubuntu 24.04
```

Platform Notes

```
BIOS settings:
 TDP Control: Manual
 TDP: 400
 PPT Control: Manual
 PPT: 400
 NUMA Nodes Per Socket: NPS1
 SMT Control : Enable
 Power Profile Selection : High Performance Mode
 ACPI CST C2 Latency : 18
 DF Cstates: Disabled
 DRAM Scrub Time: Disabled
 Global C-state Control: Disabled
 SVM mode: Disable
 SR-IOV Support: Disable
 GMI Folding: Disabled
```

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Platform Notes (Continued)

```
 Prefetch/Request Throttle: Disable
OS setting:
 cpupower: amd-pstate-epp

 Sysinfo program /cpu2026/bin/sysinfo
 Rev: 779ab21020787073335a329f3a45e2cd
 running on localhost Mon Sep  7 22:01:25 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 (254.24+suse.148.g83b9060b6e)
 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 6.4.0-150700.51-default #1 SMP PREEMPT_DYNAMIC Wed Apr 30 21:35:43 UTC 2025 (6930611) x86_64

 ------------------------------------------------------------
 2. w
    22:01:25 up 3 min,  2 users,  load average: 0.00, 0.02, 0.00
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     pts/0    192.168.68.2     22:00   13.00s  1.35s  0.24s python3
   ./run_amd_speed_aocc520_znver5_A1.py
```

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Platform Notes (Continued)

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

------------------------------------------------------------
4. ulimit -a
  core file size          (blocks, -c) unlimited
  data seg size           (kbytes, -d) unlimited
  scheduling priority             (-e) 0
  file size               (blocks, -f) unlimited
  pending signals                 (-i) 6186920
  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) 6186920
  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
 python3 ./run_amd_speed_aocc520_znver5_A1.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/CPU2026.001/templogs/preenv.fpspeed.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /cpu2026

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9845 160-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 26
    model           : 17
    stepping        : 0
    microcode       : 0xb101054
```

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Platform Notes (Continued)

```
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso
    TLB size        : 192 4K pages
    cpu cores       : 160
    siblings        : 320
    2 physical ids (chips)
    640 processors (hardware threads)
    physical id 0: core ids 0-159
    physical id 1: core ids 0-159
    physical id 0: apicids 0-319
    physical id 1: apicids 512-831
  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):                             640
  On-line CPU(s) list:                0-639
  Vendor ID:                          AuthenticAMD
  Model name:                         AMD EPYC 9845 160-Core Processor
  CPU family:                         26
  Model:                              17
  Thread(s) per core:                 2
  Core(s) per socket:                 160
  Socket(s):                          2
  Stepping:                           0
  CPU(s) scaling MHz:                 34%
  CPU max MHz:                        3718.0000
  CPU min MHz:                        1200.0000
  BogoMIPS:                           4193.27
  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 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
```

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Platform Notes (Continued)

```
                                       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 hv_inuse_wr_allowed srso_user_kernel_no
                                       amd_lbr_pmc_freeze
  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):                   0-159,320-479
  NUMA node1 CPU(s):                   160-319,480-639
  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; 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
                                       always-on; RSB filling; 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: 0-159,320-479
  node 0 size: 773355 MB
  node 0 free: 771624 MB
  node 1 cpus: 160-319,480-639
```

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Platform Notes (Continued)

```
    node 1 size: 773402 MB
    node 1 free: 770595 MB
    node distances:
    node   0   1
      0:  10  32
      1:  32  10

 ------------------------------------------------------------
 9. /proc/meminfo
     MemTotal:       1583880456 kB

 ------------------------------------------------------------
 10. who -r
    run-level 3 Sep 7 21:57

 ------------------------------------------------------------
 11. Systemd service manager version: systemd 254 (254.24+suse.148.g83b9060b6e)
    Default Target  Status
    multi-user      running

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

 ------------------------------------------------------------
 13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.51-default
    root=UUID=03f2994f-ee68-4440-b1db-7d3f781cf8b4
```

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Platform Notes (Continued)

```
    splash=silent
    mitigations=auto
    quiet
    security=apparmor
    crashkernel=380M,high
    crashkernel=72M,low
    amd_pstate=active

  ------------------------------------------------------------
  14. cpupower frequency-info
    analyzing CPU 397:
      current policy: frequency should be within 1.20 GHz and 3.72 GHz.
                      The governor "performance" may decide which speed to use
                      within this range.
      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
```

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Platform Notes (Continued)

```
------------------------------------------------------------
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
  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: /cpu2026
  Filesystem     Type   Size  Used Avail Use% Mounted on
  /dev/nvme0n1p2 btrfs  1.0T   70G  953G   7% /

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         COMPAL
    Product:        COMPAL SERVER
    Product Family: COMPAL
    Serial:         7901567500001

------------------------------------------------------------
21. dmidecode
  Additional information from dmidecode 3.7 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:
    24x Unknown A5-RE1BH64M64-RP1R4R 64 GIB 2 rank 6400


------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      10.28.00
   BIOS Date:         01/29/2026
   BIOS Revision:     5.35
   Firmware Revision: 5.35
```

Compiler Version Notes

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

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Base Compiler Invocation (Continued)

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
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

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Base Optimization Flags (Continued)

C++ benchmarks (continued):
`-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 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: basepeak = yes

816.nab_s: basepeak = yes

881.neutron_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

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: Same as 803.sph_exa_s

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

881.neutron_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/Compal-Platform-Flags-Linux-AMD_V1.9.html
http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-10-07.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2026/results/flags/Compal-Platform-Flags-Linux-AMD_V1.9.xml
http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-10-07.xml

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

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