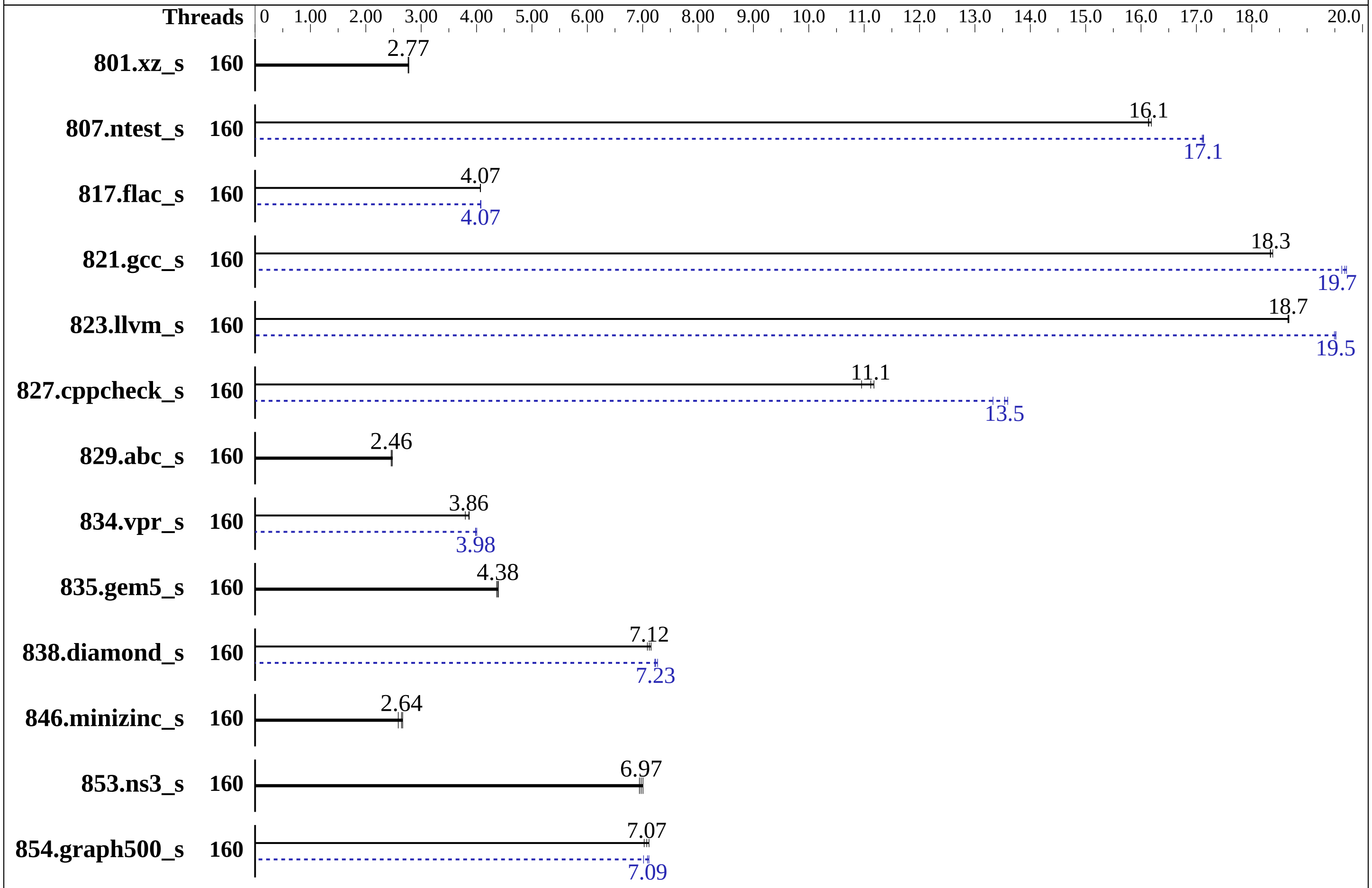
SPEC CPU®2026 Integer Speed Result

Hewlett Packard Enterprise
(Test Sponsor: HPE)
ProLiant DL345 Gen11
(2.10 GHz, AMD EPYC 9845)

SPECspeed®2026_int_base = 6.34

SPECspeed®2026_int_peak = 6.55

CPU2026 License:	3	**Test Date:**	Sep-2026
Test Sponsor:	HPE	**Hardware Availability:**	Jan-2025
Tested by:	HPE	**Software Availability:**	May-2026



Hardware

CPU Name:	AMD EPYC 9845
Max MHz:	3700
Nominal:	2100
Enabled:	160 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:	320 MB I+D on chip per chip, 32 MB shared / 16 cores
Other:	None
Memory:	768 GB (12 x 64 GB 2Rx4 PC5-6400B-R)
Storage:	1 x 3.2 TB 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 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
801.xz_s	160	214	2.76	**214**	**2.77**	213	2.78	160	214	2.76	**214**	**2.77**	213	2.78
807.ntest_s	160	70.4	16.2	**70.6**	**16.1**	70.7	16.1	160	66.6	17.1	**66.6**	**17.1**	66.5	17.1
817.flac_s	160	427	4.07	**427**	**4.07**	427	4.07	160	**426**	**4.07**	427	4.07	426	4.08
821.gcc_s	160	113	18.4	113	18.3	**113**	**18.3**	160	105	19.6	105	19.7	**105**	**19.7**
823.llvm_s	160	**75.6**	**18.7**	75.6	18.7	75.6	18.7	160	72.3	19.5	72.4	19.5	**72.3**	**19.5**
827.cppcheck_s	160	102	11.0	100	11.2	**101**	**11.1**	160	84.0	13.3	**82.7**	**13.5**	82.3	13.6
829.abc_s	160	335	2.48	338	2.46	**338**	**2.46**	160	335	2.48	338	2.46	**338**	**2.46**
834.vpr_s	160	251	3.80	247	3.87	**247**	**3.86**	160	240	3.98	238	4.00	**239**	**3.98**
835.gem5_s	160	259	4.39	261	4.36	**260**	**4.38**	160	259	4.39	261	4.36	**260**	**4.38**
838.diamond_s	160	141	7.08	140	7.15	**141**	**7.12**	160	**138**	**7.23**	139	7.22	138	7.27
846.minizinc_s	160	**253**	**2.64**	251	2.67	259	2.59	160	**253**	**2.64**	251	2.67	259	2.59
853.ns3_s	160	166	6.94	165	7.01	**165**	**6.97**	160	166	6.94	165	7.01	**165**	**6.97**
854.graph500_s	160	85.9	7.11	87.0	7.03	**86.4**	**7.07**	160	87.1	7.02	85.9	7.11	**86.2**	**7.09**

SPECspeed®2026_int_base = 6.34

SPECspeed®2026_int_peak = 6.55

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.
tuned-adm profile was set to throughput-performance using 'tuned-adm profile throughput-performance'
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-159"
LD_LIBRARY_PATH =
     "/home/cpu2026/amd_speed_aocc520_znver5_A_lib/lib:/home/cpu2026/amd_spee
     d_aocc520_znver5_A_lib/lib32:/usr/local/python3.12/lib:"
MALLOC_CONF = "retain:true"
OMP_THREAD_LIMIT = "160"
```

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
Last-Level Cache (LLC) as NUMA Node set to Enabled
ACPI CST C2 Latency set to 18 microseconds
Thermal Configuration set to Maximum Cooling
NUMA memory domains per socket set to Two memory domains per socket
Workload Profile set to Custom
```

(Continued on next page)

Platform Notes (Continued)

```
Power Regulator set to OS Control Mode

Sysinfo program /home/cpu2026/bin/sysinfo
Rev: 779ab21020787073335a329f3a45e2cd
running on localhost Tue Sep 15 23:29:51 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. 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 6.4.0-150700.53.6-default #1 SMP PREEMPT_DYNAMIC Tue Jul  1 14:54:47 UTC 2025 (8ab7501) x86_64

------------------------------------------------------------
2. w
   23:29:51 up 6 min,  6 users,  load average: 0.10, 0.11, 0.07
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     pts/0    172.16.0.100     23:25   39.00s  6.07s  5.03s python3 ./run_520_intspeed.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) 3093877
  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) 3093877
  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_520_intspeed.py
 runcpu --config amd_speed_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 intspeed
 runcpu --configfile amd_speed_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode speed --tune base:peak --size test:train:refspeed intspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2026.001/templogs/preenv.intspeed.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 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
    TLB size        : 192 4K pages
```

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Platform Notes (Continued)

```
    cpu cores       : 160
    siblings        : 320
    1 physical ids (chips)
    320 processors (hardware threads)
    physical id 0: core ids 0-159
    physical id 0: apicids 0-319
  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:                    2
  Core(s) per socket:                    160
  Socket(s):                             1
  Stepping:                              0
  Frequency boost:                       enabled
  CPU(s) scaling MHz:                    100%
  CPU max MHz:                           2100.0000
  CPU min MHz:                           1500.0000
  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
```

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Platform Notes (Continued)

```
                                                 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
    Virtualization:                              AMD-V
    L1d cache:                                   7.5 MiB (160 instances)
    L1i cache:                                   5 MiB (160 instances)
    L2 cache:                                    160 MiB (160 instances)
    L3 cache:                                    320 MiB (10 instances)
    NUMA node(s):                                10
    NUMA node0 CPU(s):                           0-15,160-175
    NUMA node1 CPU(s):                           16-31,176-191
    NUMA node2 CPU(s):                           32-47,192-207
    NUMA node3 CPU(s):                           48-63,208-223
    NUMA node4 CPU(s):                           64-79,224-239
    NUMA node5 CPU(s):                           80-95,240-255
    NUMA node6 CPU(s):                           96-111,256-271
    NUMA node7 CPU(s):                           112-127,272-287
    NUMA node8 CPU(s):                           128-143,288-303
    NUMA node9 CPU(s):                           144-159,304-319
    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
                                                 always-on; 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     7.5M   12 Data            1    64        1             64
       L1i       32K       5M    8 Instruction     1    64        1             64
       L2         1M     160M   16 Unified         2  1024        1             64
       L3        32M     320M   16 Unified         3 32768        1             64
```

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Platform Notes (Continued)

```
------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 10 nodes (0-9)
  node 0 cpus: 0-15,160-175
  node 0 size: 77026 MB
  node 0 free: 76671 MB
  node 1 cpus: 16-31,176-191
  node 1 size: 77405 MB
  node 1 free: 77070 MB
  node 2 cpus: 32-47,192-207
  node 2 size: 77403 MB
  node 2 free: 77039 MB
  node 3 cpus: 48-63,208-223
  node 3 size: 77407 MB
  node 3 free: 77147 MB
  node 4 cpus: 64-79,224-239
  node 4 size: 77407 MB
  node 4 free: 77034 MB
  node 5 cpus: 80-95,240-255
  node 5 size: 77407 MB
  node 5 free: 77179 MB
  node 6 cpus: 96-111,256-271
  node 6 size: 77407 MB
  node 6 free: 77124 MB
  node 7 cpus: 112-127,272-287
  node 7 size: 77366 MB
  node 7 free: 77151 MB
  node 8 cpus: 128-143,288-303
  node 8 size: 77405 MB
  node 8 free: 77082 MB
  node 9 cpus: 144-159,304-319
  node 9 size: 77262 MB
  node 9 free: 76888 MB
  node distances:
  node   0   1   2   3   4   5   6   7   8   9
    0:  10  11  11  11  11  12  12  12  12  12
    1:  11  10  11  11  11  12  12  12  12  12
    2:  11  11  10  11  11  12  12  12  12  12
    3:  11  11  11  10  11  12  12  12  12  12
    4:  11  11  11  11  10  12  12  12  12  12
    5:  12  12  12  12  12  10  11  11  11  11
    6:  12  12  12  12  12  11  10  11  11  11
    7:  12  12  12  12  12  11  11  10  11  11
    8:  12  12  12  12  12  11  11  11  10  11
    9:  12  12  12  12  12  11  11  11  11  10
```

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Platform Notes (Continued)

```
------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       792063032 kB

------------------------------------------------------------
10. who -r
  run-level 3 Sep 15 23:24

------------------------------------------------------------
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 nvmefc-boot-connections nvmf-autoconnect postfix purge-kernels rollback
                   rsyslog smartd sshd systemd-pstore tuned 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 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=3deb62b8-ae07-42ef-8d32-e9be1662f4ec
  splash=silent
  mitigations=auto
  quiet
  security=apparmor

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 197:
```

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Platform Notes (Continued)

```
    current policy: frequency should be within 1.50 GHz and 2.10 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. tuned-adm active
  Current active profile: throughput-performance

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

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

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Platform Notes (Continued)

```
  pages_to_scan          4096
  scan_sleep_millisecs  10000

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

------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2026
  Filesystem     Type   Size  Used Avail Use% Mounted on
  /dev/nvme0n1p2 btrfs  3.0T   29G  2.9T   1% /home

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         HPE
    Product:        ProLiant DL345 Gen11
    Product Family: ProLiant
    Serial:         DL345G11-002

------------------------------------------------------------
22. 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:
    11x Hynix HMCG94AHBRA480N 64 GB 2 rank 6400
    1x Hynix HMCG94AHBRA487N 64 GB 2 rank 6400


------------------------------------------------------------
23. 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: 1.77
```

Compiler Version Notes

```
==============================================================================
C      | 854.graph500_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++      | 807.ntest_s(base, peak) 827.cppcheck_s(base, peak) 853.ns3_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 | 801.xz_s(base, peak) 817.flac_s(base, peak) 821.gcc_s(base, peak)
       | 823.llvm_s(base, peak) 829.abc_s(base, peak) 834.vpr_s(base, peak)
       | 835.gem5_s(base, peak) 838.diamond_s(base, peak)
       | 846.minizinc_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
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

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

Base Portability Flags

801.xz_s: `-DSPEC_LP64`
807.ntest_s: `-DSPEC_LP64`

(Continued on next page)

Base Portability Flags (Continued)

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

Base Optimization Flags

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

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

Benchmarks using both C and C++:
-m64 -std=c++17 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -zopt -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp -lomp

Base Other Flags

C benchmarks:
`-Wno-return-type`

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

Peak Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

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

C++ benchmarks:

807.ntest_s: `-m64 -std=c++17 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6 -Wl,-mllvm -Wl,-reduce-array-computations=3 -Wl,-mllvm -Wl,-x86-use-vzeroupper=false -fprofile-instr-generate`(pass 1) `-fprofile-instr-use`(pass 2)

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Peak Optimization Flags (Continued)

807.ntest_s (continued):
-Ofast -flto -march=znver5 -fveclib=AMDLIBM -ffast-math
-zopt -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=100 -fopenmp -DSPEC_OPENMP
-fvirtual-function-elimination -fvisibility=hidden
-lamdalloc -lamdlibm -fopenmp=libomp -lomp

827.cppcheck_s: Same as 807.ntest_s

853.ns3_s: basepeak = yes

Benchmarks using both C and C++:

801.xz_s: basepeak = yes

817.flac_s: -m64 -std=c++17 -std=c18
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -Ofast -flto
-march=znver5 -fveclib=AMDLIBM -ffast-math -zopt
-fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -mllvm -unroll-threshold=100
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp
-lomp

821.gcc_s: -m64 -std=c++17 -std=c18
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false
-fprofile-instr-generate(pass 1) -fprofile-instr-use(pass 2)
-Ofast -flto -march=znver5 -fveclib=AMDLIBM -ffast-math
-zopt -fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -mllvm -unroll-threshold=100
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp
-lomp

823.llvm_s: Same as 821.gcc_s

829.abc_s: basepeak = yes

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Peak Optimization Flags (Continued)

834.vpr_s: `Same as 821.gcc_s`

835.gem5_s: `basepeak = yes`

838.diamond_s: `Same as 821.gcc_s`

846.minizinc_s: `basepeak = yes`

Peak Other Flags

C benchmarks:
`-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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