



SPEC CPU®2026 Integer Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant Compute DL345 Gen12

(2.25 GHz, AMD EPYC 9965)

SPECspeed®2026_int_base = 6.74

SPECspeed®2026_int_peak = 6.93

CPU2026 License: 3

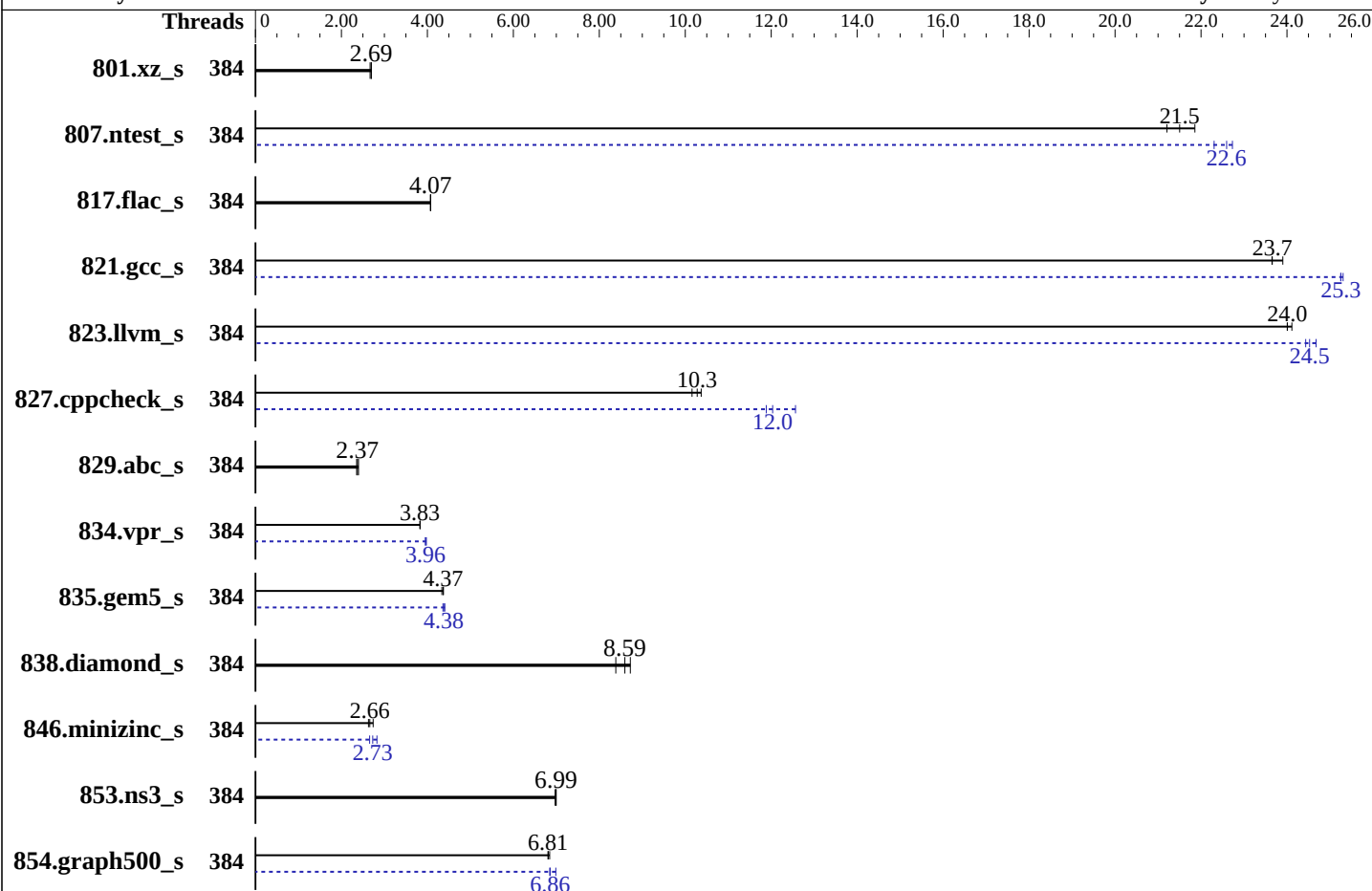
Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2026

Hardware Availability: Aug-2025

Software Availability: May-2026



Hardware

CPU Name: AMD EPYC 9965
Max MHz: 3700
Nominal: 2250
Enabled: 192 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: 384 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,
running at 5200)
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 v1.60 07/27/2026
released Jul-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	384	219	2.69	219	2.70	222	2.67	384	219	2.69	219	2.70	222	2.67
807.ntest_s	384	53.0	21.5	53.8	21.2	52.2	21.9	384	51.1	22.3	50.2	22.7	50.5	22.6
817.flac_s	384	427	4.07	426	4.07	426	4.08	384	427	4.07	426	4.07	426	4.08
821.gcc_s	384	86.6	23.9	87.5	23.7	87.5	23.7	384	81.8	25.3	82.0	25.3	82.0	25.3
823.llvm_s	384	58.5	24.1	58.8	24.0	58.8	24.0	384	57.2	24.7	57.7	24.4	57.5	24.5
827.cppcheck_s	384	110	10.2	109	10.3	108	10.4	384	94.2	11.9	93.0	12.0	89.1	12.6
829.abc_s	384	353	2.35	347	2.40	350	2.37	384	353	2.35	347	2.40	350	2.37
834.vpr_s	384	249	3.83	249	3.83	249	3.83	384	240	3.98	241	3.96	241	3.95
835.gem5_s	384	263	4.34	260	4.37	261	4.37	384	261	4.36	259	4.41	260	4.38
838.diamond_s	384	116	8.59	119	8.38	115	8.72	384	116	8.59	119	8.38	115	8.72
846.minizinc_s	384	245	2.74	252	2.66	255	2.63	384	237	2.83	252	2.66	246	2.73
853.ns3_s	384	165	6.99	165	6.97	165	7.00	384	165	6.99	165	6.97	165	7.00
854.graph500_s	384	89.7	6.81	89.3	6.84	89.7	6.81	384	87.4	6.99	89.3	6.85	89.1	6.86

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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.
tuned-adm profile was stopped using 'systemctl stop tuned'

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-383"
LD_LIBRARY_PATH =
"/home/cpu2026_1/amd_speed_aocc520_znver5_A_lib/lib:/home/cpu2026_1/amd_speed_aocc520_znver5_A_lib/lib32:/usr/local/python3.12/lib:"
MALLOCONF = "retain:true"
OMP_THREAD_LIMIT = "384"

General Notes

Binaries were compiled on a system with an AMD EPYC 9754 CPU + 768 GiB Memory using Ubuntu 24.04
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Platform Notes

BIOS Configurations : Parameters are selected in the order shown below
Workload Profile set to General Peak Frequency Compute
Determinism Control set to Manual
Performance Determinism set to Power Deterministic
Memory Patrol Scrubbing set to Disabled
ACPI CST C2 Latency set to 18 microseconds
Last-Level Cache (LLC) as NUMA Node set to Enabled
NUMA memory domains per socket set to Two memory domains per socket
Thermal Configuration set to Maximum Cooling
Workload Profile set to Custom

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Platform Notes (Continued)

Power Regulator set to OS Control Mode

Sysinfo program /home/cpu2026_1/bin/sysinfo

Rev: 779ab21020787073335a329f3a45e2cd

running on localhost Thu Sep 17 13:46:18 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
13:46:18 up 5 min, 2 users, load average: 0.18, 0.10, 0.04
USER      TTY      FROM          LOGIN@      IDLE        JCPU   PCPU   WHAT
root      pts/0    172.16.0.100  13:44      34.00s     1.19s   0.16s  python3 ./run_aocc520_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) 3093794
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) 3093794
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_aocc520_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_1
```

6. /proc/cpuinfo

```
model name      : AMD EPYC 9965 192-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 srs0
TLB size        : 192 4K pages
```

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Platform Notes (Continued)

cpu cores : 192
siblings : 384
1 physical ids (chips)
384 processors (hardware threads)
physical id 0: core ids 0-191
physical id 0: apicids 0-383

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):	384
On-line CPU(s) list:	0-383
Vendor ID:	AuthenticAMD
Model name:	AMD EPYC 9965 192-Core Processor
CPU family:	26
Model:	17
Thread(s) per core:	2
Core(s) per socket:	192
Socket(s):	1
Stepping:	0
Frequency boost:	enabled
CPU(s) scaling MHz:	100%
CPU max MHz:	2250.0000
CPU min MHz:	1500.0000
BogoMIPS:	4493.27

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 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 xsaveptr rdpru
wbnoinvd amd_ppin cppc amd_ibpb_ret arat npt lbrv svm_lock

(Continued on next page)



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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:

9 MiB (192 instances)

L1i cache:

6 MiB (192 instances)

L2 cache:

192 MiB (192 instances)

L3 cache:

384 MiB (12 instances)

NUMA node(s):

12

NUMA node0 CPU(s):

0-15, 192-207

NUMA node1 CPU(s):

16-31, 208-223

NUMA node2 CPU(s):

32-47, 224-239

NUMA node3 CPU(s):

48-63, 240-255

NUMA node4 CPU(s):

64-79, 256-271

NUMA node5 CPU(s):

80-95, 272-287

NUMA node6 CPU(s):

96-111, 288-303

NUMA node7 CPU(s):

112-127, 304-319

NUMA node8 CPU(s):

128-143, 320-335

NUMA node9 CPU(s):

144-159, 336-351

NUMA node10 CPU(s):

160-175, 352-367

NUMA node11 CPU(s):

176-191, 368-383

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; PBRSE-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	9M	12	Data	1	64	1	64
L1i	32K	6M	8	Instruction	1	64	1	64

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Platform Notes (Continued)

L2	1M	192M	16 Unified	2	1024	1	64
L3	32M	384M	16 Unified	3	32768	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

available: 12 nodes (0-11)

node 0 cpus: 0-15,192-207

node 0 size: 64086 MB

node 0 free: 63838 MB

node 1 cpus: 16-31,208-223

node 1 size: 64503 MB

node 1 free: 64274 MB

node 2 cpus: 32-47,224-239

node 2 size: 64503 MB

node 2 free: 64291 MB

node 3 cpus: 48-63,240-255

node 3 size: 64503 MB

node 3 free: 64260 MB

node 4 cpus: 64-79,256-271

node 4 size: 64503 MB

node 4 free: 64303 MB

node 5 cpus: 80-95,272-287

node 5 size: 64503 MB

node 5 free: 64252 MB

node 6 cpus: 96-111,288-303

node 6 size: 64503 MB

node 6 free: 63983 MB

node 7 cpus: 112-127,304-319

node 7 size: 64503 MB

node 7 free: 63991 MB

node 8 cpus: 128-143,320-335

node 8 size: 64357 MB

node 8 free: 63864 MB

node 9 cpus: 144-159,336-351

node 9 size: 64503 MB

node 9 free: 63669 MB

node 10 cpus: 160-175,352-367

node 10 size: 64503 MB

node 10 free: 64277 MB

node 11 cpus: 176-191,368-383

node 11 size: 64503 MB

node 11 free: 64043 MB

node distances:

node	0	1	2	3	4	5	6	7	8	9	10	11
0:	10	11	11	11	11	11	12	12	12	12	12	12
1:	11	10	11	11	11	11	12	12	12	12	12	12

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2:	11	11	10	11	11	11	12	12	12	12	12	12
3:	11	11	11	10	11	11	12	12	12	12	12	12
4:	11	11	11	11	10	11	12	12	12	12	12	12
5:	11	11	11	11	11	10	12	12	12	12	12	12
6:	12	12	12	12	12	12	10	11	11	11	11	11
7:	12	12	12	12	12	12	11	10	11	11	11	11
8:	12	12	12	12	12	12	11	11	10	11	11	11
9:	12	12	12	12	12	12	11	11	11	10	11	11
10:	12	12	12	12	12	12	11	11	11	11	10	11
11:	12	12	12	12	12	12	11	11	11	11	11	10

9. /proc/meminfo
MemTotal: 792041576 kB

10. who -r
run-level 3 Sep 17 13:42

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 ahslog amsd apparmor appstream-sync-cache auditd bluetooth cpqFca cpqIde cpqScsi cron display-manager getty@ irqbalance issue-generator kbdsettings klog lvm2-monitor mr_cpqScsi nscd nvme-fc-boot-connections nvmmf-autoconnect postfix purge-kernels rollback rsyslog smad smartd sshd sut 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 amsd_rev autofs autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd console-getty cpqFca_rev cpqIde_rev cpqScsi_rev cpqiScsi cups cups-browsed debug-shell dnsmasq ebttables exchange-bmc-os-info firewallld fsidd gnome-remote-desktop gpm grub2-once haveged hwloc-dump-hwdata ipmi ipmievld issue-add-ssh-keys kexec-load lunmask man-db-create mr_cpqScsi_rev multipathd nfs nfs-blkmap nmb openvpn@ ostree-remount ostree-state-overlay@ rpcbind rpmconfigcheck rsyncd rtkit-daemon samba-bgqd serial-getty@ smad_rev smartd_generate_opts smb snmpd snmptrapd speech-dispatcherd systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd tuned udisks2 update-system-flatpaks upower vncserver@ wpa_supplicant@ pcscd saned@ systemd-userdbd wickedd
indirect	

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Platform Notes (Continued)

13. Linux kernel boot-time arguments, from /proc/cmdline

```
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.53.6-default
root=UUID=de91d38d-7b1b-4bc1-b4ce-f57bbe3b30b4
splash=silent
mitigations=auto
quiet
security=apparmor
```

14. cpupower frequency-info

analyzing CPU 382:

current policy: frequency should be within 1.50 GHz and 2.25 GHz.
The governor "performance" may decide which speed to use within this range.

boost state support:

Supported: yes

Active: yes

15. tuned-adm active

It seems that tuned daemon is not running, preset profile is not activated.
Preset profile: virtual-host

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

(Continued on next page)



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Platform Notes (Continued)

17. /sys/kernel/mm/transparent_hugepage
defrag [always] defer defer+madvice madvice never
enabled [always] madvice 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 SUSE Linux Enterprise Server 15 SP7

20. Disk information
SPEC is set to: /home/cpu2026_1
Filesystem Type Size Used Avail Use% Mounted on
/dev/nvme0n1p2 btrfs 3.0T 60G 2.9T 2% /home

21. /sys/devices/virtual/dmi/id
Vendor: HPE
Product: HPE ProLiant Compute DL345 Gen12
Product Family: ProLiant
Serial: I2DZ4HNF1Y

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:
12x Hynix HMC94AHBRA480N 64 GB 2 rank 6400, configured at 5200

23. BIOS
(This section combines info from /sys/devices and dmidecode.)

(Continued on next page)



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Platform Notes (Continued)

BIOS Vendor: HPE
BIOS Version: 1.60
BIOS Date: 07/27/2026
BIOS Revision: 1.60
Firmware Revision: 1.22

Compiler Version Notes

=====
C | 854.graph500_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++ | 807.ntest_s(base, peak) 827.cppcheck_s(base, peak) 853.ns3_s(base, peak)
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

(Continued on next page)



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Base Compiler Invocation (Continued)

C++ benchmarks:

clang++

Benchmarks using both C and C++:

clang++ clang

Base Portability Flags

801.xz_s: -DSPEC_LP64
807.ntest_s: -DSPEC_LP64
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 -fvvisibility=hidden -lamdalloc
-lamdlibm -fopenmp=libomp -lomp

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Base Optimization Flags (Continued)

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



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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)  
-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: basepeak = yes

```
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
```

(Continued on next page)



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Peak Optimization Flags (Continued)

823.llvm_s: Same as 821.gcc_s

829.abc_s: basepeak = yes

834.vpr_s: Same as 821.gcc_s

835.gem5_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

838.diamond_s: basepeak = yes

846.minizinc_s: Same as 821.gcc_s

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>



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