



SPEC

# SPEC CPU®2026 Integer Rate Result

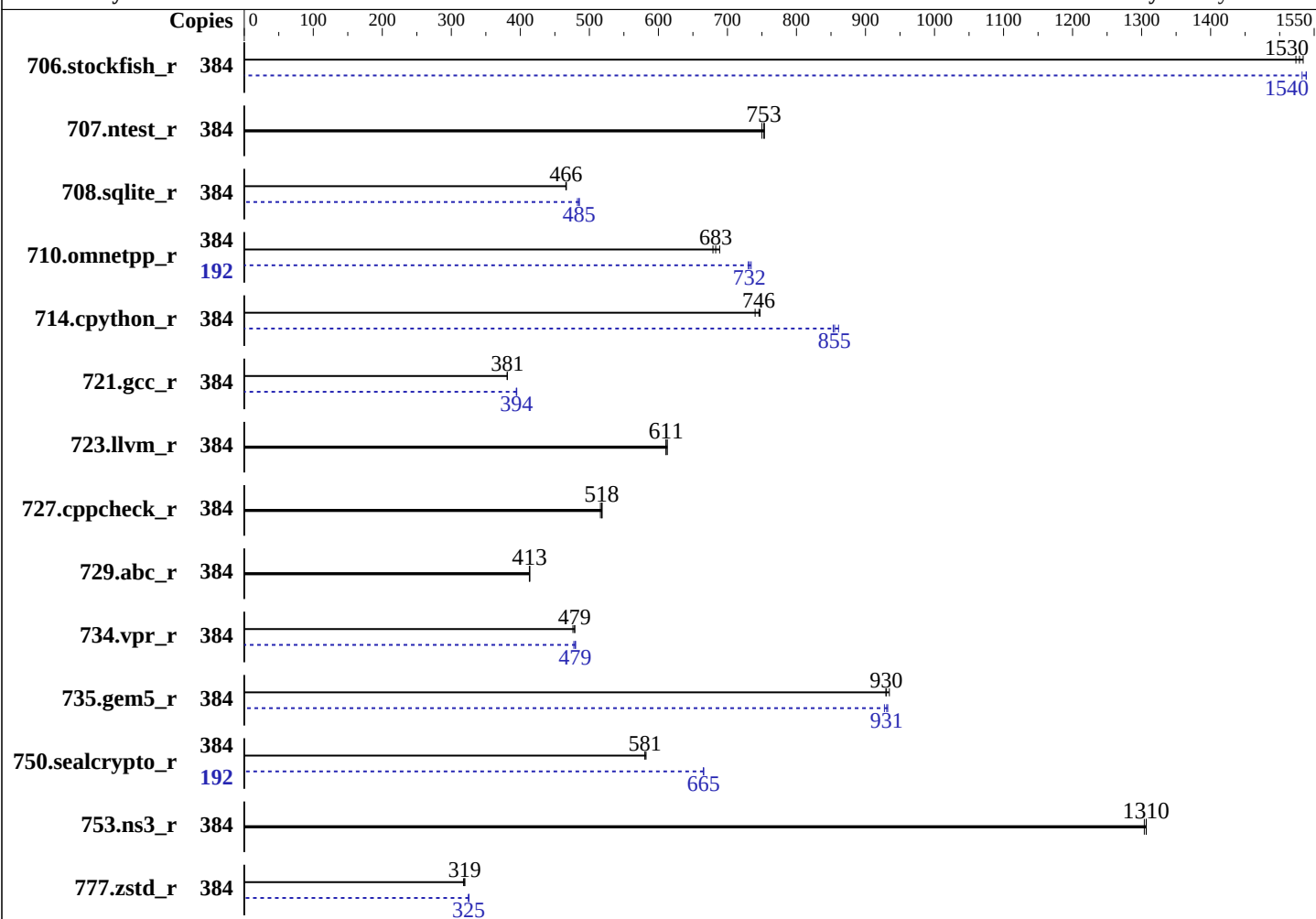
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**Hewlett Packard Enterprise**

(Test Sponsor: HPE)

**ProLiant Compute DL345 Gen12**

(2.25 GHz, AMD EPYC 9965)

**SPECrate®2026\_int\_base = 628****SPECrate®2026\_int\_peak = 648****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

(Continued on next page)

## Software

OS: SUSE Linux Enterprise Server 15 SP7  
Kernel 6.4.0-150700.53.6-default  
Compiler: C/C++/Fortran: Version 5.2.0 of AOCC  
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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## Hardware (Continued)

Other: None

## Results Table

| Benchmark        | Base   |            |            |            |             |            |            | Peak   |            |            |            |             |            |            |
|------------------|--------|------------|------------|------------|-------------|------------|------------|--------|------------|------------|------------|-------------|------------|------------|
|                  | Copies | Seconds    | Ratio      | Seconds    | Ratio       | Seconds    | Ratio      | Copies | Seconds    | Ratio      | Seconds    | Ratio       | Seconds    | Ratio      |
| 706.stockfish_r  | 384    | 315        | 1530       | <b>317</b> | <b>1530</b> | 318        | 1520       | 384    | 314        | 1540       | <b>315</b> | <b>1540</b> | 316        | 1530       |
| 707.ntest_r      | 384    | 302        | 754        | 303        | 750         | <b>302</b> | <b>753</b> | 384    | 302        | 754        | 303        | 750         | <b>302</b> | <b>753</b> |
| 708.sqlite_r     | 384    | <b>435</b> | <b>466</b> | 435        | 466         | 434        | 467        | 384    | 420        | 483        | <b>418</b> | <b>485</b>  | 418        | 485        |
| 710.omnetpp_r    | 384    | 271        | 689        | 275        | 679         | <b>273</b> | <b>683</b> | 192    | 127        | 734        | <b>127</b> | <b>732</b>  | 128        | 730        |
| 714.cpython_r    | 384    | 249        | 740        | <b>247</b> | <b>746</b>  | 246        | 747        | 384    | 214        | 861        | 216        | 853         | <b>215</b> | <b>855</b> |
| 721.gcc_r        | 384    | <b>691</b> | <b>381</b> | 691        | 381         | 692        | 381        | 384    | 668        | 394        | <b>668</b> | <b>394</b>  | 667        | 395        |
| 723.llvm_r       | 384    | <b>319</b> | <b>611</b> | 319        | 611         | 318        | 613        | 384    | <b>319</b> | <b>611</b> | 319        | 611         | 318        | 613        |
| 727.cppcheck_r   | 384    | 267        | 516        | 266        | 519         | <b>266</b> | <b>518</b> | 384    | 267        | 516        | 266        | 519         | <b>266</b> | <b>518</b> |
| 729.abc_r        | 384    | 427        | 413        | 426        | 414         | <b>426</b> | <b>413</b> | 384    | 427        | 413        | 426        | 414         | <b>426</b> | <b>413</b> |
| 734.vpr_r        | 384    | 370        | 479        | <b>370</b> | <b>479</b>  | 372        | 476        | 384    | 371        | 477        | <b>369</b> | <b>479</b>  | 369        | 480        |
| 735.gem5_r       | 384    | 200        | 935        | <b>201</b> | <b>930</b>  | 201        | 929        | 384    | <b>201</b> | <b>931</b> | 202        | 927         | 201        | 932        |
| 750.sealcrypto_r | 384    | <b>354</b> | <b>581</b> | 355        | 580         | 354        | 582        | 192    | <b>155</b> | <b>665</b> | 155        | 666         | 155        | 665        |
| 753.ns3_r        | 384    | 180        | 1310       | <b>180</b> | <b>1310</b> | 181        | 1300       | 384    | 180        | 1310       | <b>180</b> | <b>1310</b> | 181        | 1300       |
| 777.zstd_r       | 384    | 779        | 318        | <b>774</b> | <b>319</b>  | 774        | 319        | 384    | 760        | 326        | <b>760</b> | <b>325</b>  | 762        | 325        |

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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/>

## Submit Notes

The config file option 'submit' was used.  
'numactl' was used to bind copies to the cores.  
See the configuration file for details.

## Operating System Notes

'ulimit -s unlimited' was used to set environment stack size limit  
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <etc>

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## Operating System Notes (Continued)

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,  
'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' and  
'echo always > /sys/kernel/mm/transparent\_hugepage/shmem\_enabled' run as root.  
tuned-adm profile was set to balanced using 'tuned-adm profile balanced'

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

LD\_LIBRARY\_PATH =

"/home/cpu2026\_1/amd\_rate\_aocc520\_znver5\_A\_lib/lib:/home/cpu2026\_1/amd\_r  
ate\_aocc520\_znver5\_A\_lib/lib32:/usr/local/python3.12/lib:"

MALLOC\_CONF = "retain:true"

## General Notes

Binaries were compiled on a system with 2x AMD EPYC Venice256 CPU + 2TiB

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 High Performance Compute (HPC)

Determinism Control set to Manual

Performance Determinism set to Power Deterministic

NUMA memory domains per socket set to Four memory domains per socket

Thermal Configuration set to Maximum Cooling

Workload Profile set to Custom

(Continued on next page)



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## Platform Notes (Continued)

L1 HW Prefetcher set to Disabled  
Power Regulator set to OS Control Mode

Sysinfo program /home/cpu2026\_1/bin/sysinfo  
Rev: 779ab21020787073335a329f3a45e2cd  
running on localhost Wed Sep 16 02:15:22 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

02:15:22 up 11 min, 2 users, load average: 0.55, 0.22, 0.09  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root pts/0 172.16.0.100 02:05 1:20 20.12s 18.96s python3 ./run\_intrate.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) 3093799
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) 3093799
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_intrate.py
runcpu --config amd_rate_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 intrate
runcpu --configfile amd_rate_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode rate --tune base:peak --size test:train:refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2026.002/temlogs/preenv.intrate.002.0.log --lognum 002.0 --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 srso
```

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## Platform Notes (Continued)

TLB size : 192 4K pages  
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: 75%  
CPU max MHz: 2250.0000  
CPU min MHz: 1500.0000  
BogoMIPS: 4493.59

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 aperfmpperf 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 xsaveprrtr rdpru

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## Platform Notes (Continued)

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

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):

4

NUMA node0 CPU(s):

0-47,192-239

NUMA node1 CPU(s):

48-95,240-287

NUMA node2 CPU(s):

96-143,288-335

NUMA node3 CPU(s):

144-191,336-383

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/swaps barriers and \_\_user pointer sanitization

Vulnerability Spectre v2:

Mitigation; Enhanced / Automatic IBRS; IBPB conditional; STIBP always-on; PBRB-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             |
| 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: 4 nodes (0-3)

(Continued on next page)



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## Platform Notes (Continued)

```
node 0 cpus: 0-47,192-239
node 0 size: 193131 MB
node 0 free: 192470 MB
node 1 cpus: 48-95,240-287
node 1 size: 193472 MB
node 1 free: 192663 MB
node 2 cpus: 96-143,288-335
node 2 size: 193510 MB
node 2 free: 192348 MB
node 3 cpus: 144-191,336-383
node 3 size: 193365 MB
node 3 free: 191397 MB
node distances:
node  0  1  2  3
  0:  10  12  12  12
  1:  12  10  12  12
  2:  12  12  10  12
  3:  12  12  12  10
```

```
-----
9. /proc/meminfo
   MemTotal:      792042988 kB
```

```
-----
10. who -r
    run-level 3 Sep 16 02:11
```

```
-----
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 nsd nvme-fc-boot-connections
           nvme-f-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 ipmievd
```

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## Platform Notes (Continued)

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@  
indirect pcsd 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=de91d38d-7b1b-4bc1-b4ce-f57bbe3b30b4  
splash=silent  
mitigations=auto  
quiet  
security=apparmor

### 14. cpupower frequency-info

analyzing CPU 252:

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

boost state support:

Supported: yes

Active: yes

### 15. tuned-adm active

Current active profile: balanced

### 16. sysctl

|                              |       |
|------------------------------|-------|
| kernel.numa_balancing        | 0     |
| 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     |

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Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2026

Hardware Availability: Aug-2025

Software Availability: May-2026

## Platform Notes (Continued)

```
vm.nr_overcommit_hugepages      0
vm.swappiness                    1
vm.watermark_boost_factor       15000
vm.watermark_scale_factor       10
vm.zone_reclaim_mode            1
```

### 17. /sys/kernel/mm/transparent\_hugepage

```
defrag      [always] defer defer+madvise madvise never
enabled     [always] madvise never
hpage_pmd_size 2097152
shmem_enabled [always] within_size advise never deny force
```

### 18. /sys/kernel/mm/transparent\_hugepage/khugepaged

```
alloc_sleep_millisecs 60000
defrag                 1
max_ptes_none          511
max_ptes_shared        256
max_ptes_swap          64
pages_to_scan          4096
scan_sleep_millisecs   10000
```

### 19. OS release

```
From /etc/*-release /etc/*-version
os-release 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.

(Continued on next page)



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ProLiant Compute DL345 Gen12  
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Hardware Availability: Aug-2025

Software Availability: May-2026

## Platform Notes (Continued)

Memory:

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

### 23. BIOS

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

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

## Compiler Version Notes

```
=====  
C      | 708.sqlite_r(base, peak) 714.cpython_r(base, peak) 777.zstd_r(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++    | 706.stockfish_r(base, peak) 707.ntest_r(base, peak)  
      | 727.cppcheck_r(base, peak) 753.ns3_r(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 | 710.omnetpp_r(base, peak) 721.gcc_r(base, peak) 723.llvm_r(base,  
      | peak) 729.abc_r(base, peak) 734.vpr_r(base, peak) 735.gem5_r(base,  
      | peak) 750.sealcrypto_r(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  
-----



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**Hardware Availability:** Aug-2025

**Software Availability:** May-2026

## Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Benchmarks using both C and C++:

clang++ clang

## Base Optimization Flags

C benchmarks:

-std=c18 -no-pie -Wl,-mllvm -Wl,-inline-threshold=1500 -fstrip-mining  
-O3 -march=znver5 -fveclib=AMDLIBM -flto -fno-PIE -fno-plt  
-fremap-arrays -mllvm -inline-threshold=1500 -lamdalloc -lamdlibm

C++ benchmarks:

-std=c++17 -no-pie -Wl,-mllvm -Wl,-inline-threshold=1500 -O3  
-march=znver5 -fveclib=AMDLIBM -flto -fno-PIE -fno-plt  
-fvirtual-function-elimination -fvisibility=hidden  
-mllvm -inline-threshold=1500 -stdlib=libc++ -lamdalloc -lamdlibm

Benchmarks using both C and C++:

-std=c++17 -std=c18 -no-pie -Wl,-mllvm -Wl,-inline-threshold=1500 -O3  
-march=znver5 -fveclib=AMDLIBM -flto -fno-PIE -fno-plt  
-fremap-arrays -mllvm -inline-threshold=1500  
-fvirtual-function-elimination -fvisibility=hidden -stdlib=libc++  
-lamdalloc -lamdlibm

## Base Other Flags

C benchmarks:

-L/work/cpu2026/v101/aocc52/rate/amd\_rate\_aocc520\_znver5\_A\_lib/lib

C++ benchmarks:

-L/work/cpu2026/v101/aocc52/rate/amd\_rate\_aocc520\_znver5\_A\_lib/lib

Benchmarks using both C and C++:

-L/work/cpu2026/v101/aocc52/rate/amd\_rate\_aocc520\_znver5\_A\_lib/lib



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Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2026

Hardware Availability: Aug-2025

Software Availability: May-2026

## Peak Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Benchmarks using both C and C++:

clang++ clang

## Peak Optimization Flags

C benchmarks:

```
708.sqlite_r: -std=c18 -no-pie -Wl,-mllvm -Wl,-inline-threshold=1500
-fstrip-mining -fprofile-instr-generate(pass 1)
-fprofile-instr-use(pass 2) -O3 -march=znver5
-fveclib=AMDLIBM -flto -fno-PIE -fno-plt -fremap-arrays
-mllvm -inline-threshold=1500 -lamdalloc -lamdlibm
```

```
714.cpython_r: -std=c18 -no-pie -fprofile-instr-generate(pass 1)
-fprofile-instr-use(pass 2) -O3 -march=znver5
-fveclib=AMDLIBM -flto -fno-PIE -fno-plt -fremap-arrays
-mllvm -inline-threshold=1500 -mllvm -unroll-threshold=50
-lamdalloc -lamdlibm
```

```
777.zstd_r: -std=c18 -no-pie -Wl,-mllvm -Wl,-inline-threshold=1500
-fstrip-mining -O3 -march=znver5 -fveclib=AMDLIBM -flto
-fno-PIE -fno-plt -fremap-arrays
-mllvm -inline-threshold=1500
-mllvm -inline-threshold=3000 -lamdalloc -lamdlibm
```

C++ benchmarks:

```
706.stockfish_r: -std=c++17 -no-pie -Wl,-mllvm -Wl,-inline-threshold=1500
-O3 -march=znver5 -fveclib=AMDLIBM -flto -fno-PIE
-fno-plt -fvirtual-function-elimination
-fvisibility=hidden -mllvm -inline-threshold=1500
-stdlib=libc++ -lamdalloc -lamdlibm
```

707.ntest\_r: basepeak = yes

727.cppcheck\_r: basepeak = yes

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## Peak Optimization Flags (Continued)

753.ns3\_r: basepeak = yes

Benchmarks using both C and C++:

710.omnetpp\_r: -std=c++17 -std=c18 -no-pie  
-Wl,-mllvm -Wl,-inline-threshold=1500 -O3 -march=znver5  
-fveclib=AMDLIBM -flto -fno-PIE -fno-plt -fremap-arrays  
-mllvm -inline-threshold=1500  
-fvirtual-function-elimination -fvisibility=hidden  
-stdlib=libc++ -lamdalloc -lamdlibm

721.gcc\_r: -std=c++17 -std=c18 -no-pie  
-Wl,-mllvm -Wl,-inline-threshold=1500  
-fprofile-instr-generate(pass 1)  
-fprofile-instr-use(pass 2) -O3 -march=znver5  
-fveclib=AMDLIBM -flto -fno-PIE -fno-plt -fremap-arrays  
-mllvm -inline-threshold=1500  
-fvirtual-function-elimination -fvisibility=hidden  
-stdlib=libc++ -lamdalloc -lamdlibm

723.llvm\_r: basepeak = yes

729.abc\_r: basepeak = yes

734.vpr\_r: Same as 710.omnetpp\_r

735.gem5\_r: Same as 710.omnetpp\_r

750.sealcrypto\_r: Same as 710.omnetpp\_r

## Peak Other Flags

C benchmarks:

-L/work/cpu2026/v101/aocc52/rate/amd\_rate\_aocc520\_znver5\_A\_lib/lib

C++ benchmarks:

-L/work/cpu2026/v101/aocc52/rate/amd\_rate\_aocc520\_znver5\_A\_lib/lib

Benchmarks using both C and C++:

-L/work/cpu2026/v101/aocc52/rate/amd\_rate\_aocc520\_znver5\_A\_lib/lib



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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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