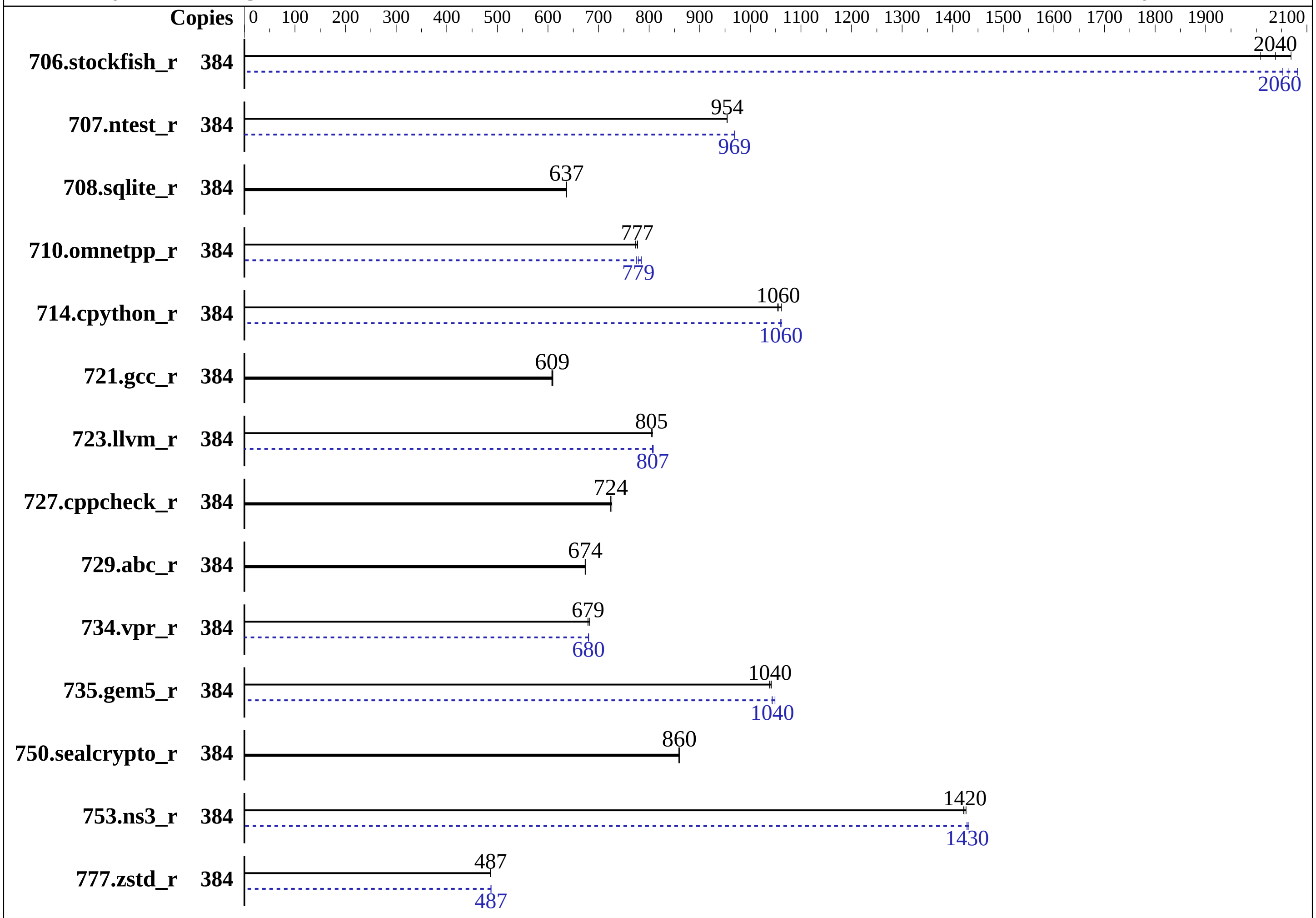
SPEC CPU®2026 Integer Rate Result

Maginfra Co., Ltd.
QR8218-D3 (AMD EPYC 9645)

SPECrate®2026_int_base = 850

SPECrate®2026_int_peak = 852

CPU2026 License:	9087	**Test Date:**	Jul-2026
Test Sponsor:	Maginfra Co., Ltd.	**Hardware Availability:**	Dec-2025
Tested by:	Maginfra Co., Ltd.	**Software Availability:**	Jan-2026



Hardware

CPU Name:	AMD EPYC 9645
Max MHz:	3700
Nominal:	2300
Enabled:	192 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:	256 MB I+D on chip per chip, 32 MB shared / 12 cores
Other:	None
Memory:	1536 GB (24 x 64 GB 2Rx4 PC5-6400B-R)
Storage:	1 x 4 TB NVME SSD
Cooling:	Air
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP7 6.4.0-150700.51-default
Compiler:	C/C++/Fortran: Version 5.1.0 of AOCC
Compiler Category:	Vendor
Firmware:	Version 01.14.00 released Dec-2025
File System:	xfs
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

	Base							Peak						
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
706.stockfish_r	384	241	2010	**237**	**2040**	234	2070	384	**234**	**2060**	232	2080	236	2050
707.ntest_r	384	238	954	238	954	**238**	**954**	384	**235**	**969**	235	968	234	969
708.sqlite_r	384	319	636	318	637	**318**	**637**	384	319	636	318	637	**318**	**637**
710.omnetpp_r	384	241	773	240	777	**240**	**777**	384	**240**	**779**	241	775	238	785
714.cpython_r	384	**174**	**1060**	173	1060	175	1050	384	**173**	**1060**	173	1060	174	1060
721.gcc_r	384	**433**	**609**	432	610	434	608	384	**433**	**609**	432	610	434	608
723.llvm_r	384	**242**	**805**	241	807	242	804	384	241	806	**241**	**807**	241	808
727.cppcheck_r	384	190	726	191	723	**190**	**724**	384	190	726	191	723	**190**	**724**
729.abc_r	384	**262**	**674**	262	673	262	674	384	**262**	**674**	262	673	262	674
734.vpr_r	384	**261**	**679**	261	679	259	682	384	**260**	**680**	260	681	260	680
735.gem5_r	384	180	1040	180	1040	**180**	**1040**	384	179	1040	178	1050	**179**	**1040**
750.sealcrypto_r	384	**239**	**860**	240	858	239	860	384	**239**	**860**	240	858	239	860
753.ns3_r	384	165	1430	**165**	**1420**	166	1420	384	164	1430	165	1430	**165**	**1430**
777.zstd_r	384	508	487	**508**	**487**	509	486	384	**507**	**487**	507	488	509	486

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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>

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.
```

(Continued on next page)

Operating System Notes (Continued)

```
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' run as root.
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
     "/home/CPU2026/amd_rate_aocc510_znver5_B_lib/lib:/home/CPU2026/amd_rate_
     aocc510_znver5_B_lib/lib32:"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries were compiled on a system with 2x AMD EPYC Venice256 CPU + 2TiB Memory using Ubuntu 24.04
```

Platform Notes

```
 BIOS configuration:
 NUMA nodes per socket = NPS4
 Determinism Slider = Power
 cTDP Control = Manual
 cTDP = 500
 Package Power Limit Control = Manual
 Package Power Limit  = 500

 Sysinfo program /home/CPU2026/bin/sysinfo
 Rev: 779ab21020787073335a329f3a45e2cd
 running on localhost Mon Aug 17 20:35:45 2026

 SUT (System Under Test) info as seen by some common utilities.

 ------------------------------------------------------------
 Table of contents
 ------------------------------------------------------------
  1. uname -srvm
  2. w
  3. Username
```

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Platform Notes (Continued)

```
  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. 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 6.4.0-150700.51-default #1 SMP PREEMPT_DYNAMIC Wed Apr 30 21:35:43 UTC 2025 (6930611) x86_64

------------------------------------------------------------
2. w
   20:35:45 up 2 min,  1 user,  load average: 0.59, 0.26, 0.10
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                20:34   17.00s  5.02s  3.90s python3 ./run_amd_rate_aocc510_znver5_B1.py

------------------------------------------------------------
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) 6189674
  max locked memory       (kbytes, -l) 2048
  max memory size         (kbytes, -m) unlimited
  open files                      (-n) 1024
  pipe size            (512 bytes, -p) 8
```

(Continued on next page)

Platform Notes (Continued)

```
  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) 6189674
  virtual memory          (kbytes, -v) unlimited
  file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=42
 login -- root
 -bash
 python3 ./run_amd_rate_aocc510_znver5_B1.py
 runcpu --config amd_rate_aocc510_znver5_B1.cfg --tune all --reportable --iterations 3 intrate
 runcpu --configfile amd_rate_aocc510_znver5_B1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode rate --tune base:peak --size test:train:refrate intrate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2026.054/templogs/preenv.intrate.054.0.log --lognum 054.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2026

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9645 96-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 26
    model           : 17
    stepping        : 0
    microcode       : 0xb101054
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso
    TLB size        : 192 4K pages
    cpu cores       : 96
    siblings        : 192
    2 physical ids (chips)
    384 processors (hardware threads)
    physical id 0: core ids 0-11,16-27,32-43,48-59,64-75,80-91,96-107,112-123
    physical id 1: core ids 0-11,16-27,32-43,48-59,64-75,80-91,96-107,112-123
    physical id 0: apicids 0-23,32-55,64-87,96-119,128-151,160-183,192-215,224-247
    physical id 1: apicids 256-279,288-311,320-343,352-375,384-407,416-439,448-471,480-503
 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
```

(Continued on next page)

Platform Notes (Continued)

```
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 9645 96-Core Processor
CPU family:                     26
Model:                          17
Thread(s) per core:             2
Core(s) per socket:             96
Socket(s):                      2
Stepping:                       0
Frequency boost:                enabled
CPU(s) scaling MHz:             101%
CPU max MHz:                    2300.0000
CPU min MHz:                    1500.0000
BogoMIPS:                       4593.28
Flags:                          fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
                                pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb
                                rdtscp lm constant_tsc rep_good amd_lbr_v2 nopl nonstop_tsc cpuid
                                extd_apicid aperfmperf rapl pni pclmulqdq monitor ssse3 fma cx16 pcid
                                sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm
                                cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
                                osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpext
                                perfctr_llc mwaitx cpb cat_l3 cdp_l3 hw_pstate ssbd mba perfmon_v2
                                ibrs ibpb stibp ibrs_enhanced vmmcall fsgsbase tsc_adjust bmi1 avx2
                                smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
                                avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
                                xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                                cqm_mbm_local user_shstk avx_vnni avx512_bf16 clzero irperf
                                xsaveerptr rdpru wbnoinvd amd_ppin cppc amd_ibpb_ret arat npt lbrv
                                svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
                                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:                       512 MiB (16 instances)
NUMA node(s):                   8
NUMA node0 CPU(s):              0-23,192-215
NUMA node1 CPU(s):              24-47,216-239
```

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Platform Notes (Continued)

```
  NUMA node2 CPU(s):                      48-71,240-263
  NUMA node3 CPU(s):                      72-95,264-287
  NUMA node4 CPU(s):                      96-119,288-311
  NUMA node5 CPU(s):                      120-143,312-335
  NUMA node6 CPU(s):                      144-167,336-359
  NUMA node7 CPU(s):                      168-191,360-383
  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       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     512M   16 Unified         3 32768        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 8 nodes (0-7)
  node 0 cpus: 0-23,192-215
  node 0 size: 192979 MB
  node 0 free: 192359 MB
  node 1 cpus: 24-47,216-239
  node 1 size: 193523 MB
  node 1 free: 193021 MB
  node 2 cpus: 48-71,240-263
  node 2 size: 193484 MB
  node 2 free: 192984 MB
  node 3 cpus: 72-95,264-287
  node 3 size: 193523 MB
  node 3 free: 193030 MB
  node 4 cpus: 96-119,288-311
  node 4 size: 193523 MB
```

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Platform Notes (Continued)

```
    node 4 free: 193102 MB
    node 5 cpus: 120-143,312-335
    node 5 size: 193523 MB
    node 5 free: 193098 MB
    node 6 cpus: 144-167,336-359
    node 6 size: 193523 MB
    node 6 free: 193065 MB
    node 7 cpus: 168-191,360-383
    node 7 size: 193365 MB
    node 7 free: 192877 MB
    node distances:
    node   0   1   2   3   4   5   6   7
      0:  10  12  12  12  32  32  32  32
      1:  12  10  12  12  32  32  32  32
      2:  12  12  10  12  32  32  32  32
      3:  12  12  12  10  32  32  32  32
      4:  32  32  32  32  10  12  12  12
      5:  32  32  32  32  12  10  12  12
      6:  32  32  32  32  12  12  10  12
      7:  32  32  32  32  12  12  12  10

  ------------------------------------------------------------
  9. /proc/meminfo
     MemTotal:       1584584296 kB

  ------------------------------------------------------------
  10. who -r
    run-level 3 Aug 17 20:33

  ------------------------------------------------------------
  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          YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager getty@ irqbalance
                     issue-generator kbdsettings klog lvm2-monitor nscd nvmefc-boot-connections
                     nvmf-autoconnect postfix purge-kernels rollback rsyslog smartd systemd-pstore
    enabled-runtime  systemd-remount-fs
    disabled         autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                     chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
                     firewalld fsidd gpm grub2-once haveged hwloc-dump-hwdata ipmi ipmievd issue-add-ssh-keys
                     kexec-load lunmask man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd
                     serial-getty@ smartd_generate_opts snmpd snmptrapd sshd systemd-boot-check-no-failures
                     systemd-confext systemd-network-generator systemd-sysext systemd-time-wait-sync
```

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Platform Notes (Continued)

```
                   systemd-timesyncd tuned udisks2 vncserver@ wicked wickedd-auto4 wickedd-dhcp4
                     wickedd-dhcp6 wickedd-nanny
  indirect           systemd-userdbd wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.51-default
  root=UUID=b599d87c-474e-4c72-b781-36d0bcedf18d
  splash=silent
  mitigations=auto
  quiet
  security=apparmor

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 30:
    current policy: frequency should be within 1.50 GHz and 2.30 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: 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
```

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Platform Notes (Continued)

```
  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
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p2 xfs   929G   74G  855G   8% /

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         Maginfra
    Product:        QR8218-D3
    Product Family: Not specified
    Serial:         00000000

------------------------------------------------------------
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 Samsung M321R8GA0PB2-CCPEC 64 GB 2 rank 6400
    11x Samsung M321R8GA0PB2-CCPPC 64 GB 2 rank 6400
```

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Platform Notes (Continued)

```
     1x Samsung M321R8GA0PB2-CCPWC 64 GB 2 rank 6400


 ------------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       American Megatrends International, LLC.
    BIOS Version:      01.14.00
    BIOS Date:         12/25/2025
```

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_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/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_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/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_5.1.0-Build#1994 2025_12_23)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

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

Base Optimization Flags

C benchmarks:
```
-m64 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather
-Wl,-mllvm -Wl,-extra-inliner -O3 -march=znver5 -fveclib=AMDLIBM
-fno-PIE -no-pie -flto -fstruct-layout=7 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays -fstrip-mining
-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lflang
-lamdalloc
```

C++ benchmarks:
```
-m64 -std=c++17 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver5
-fveclib=AMDLIBM -flto -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt -fno-PIE -no-pie
-fvirtual-function-elimination -fvisibility=hidden -lamdlibm -lflang
-lamdalloc
```

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 -march=znver5
-fveclib=AMDLIBM -fno-PIE -no-pie -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-zopt -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000 -fvirtual-function-elimination
-fvisibility=hidden -lamdlibm -lflang -lamdalloc
```

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: basepeak = yes

714.cpython_r: -m64 -std=c18
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand
-fenable-aggressive-gather -Wl,-mllvm -Wl,-extra-inliner
-O3 -march=znver5 -fveclib=AMDLIBM -fno-PIE -no-pie
-flto -fstruct-layout=7 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays
-fstrip-mining -mllvm -reduce-array-computations=3 -zopt
-lamdlibm -lamdalloc -lflang

777.zstd_r: Same as 714.cpython_r

C++ benchmarks:

706.stockfish_r: -m64 -std=c++17
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver5 -fveclib=AMDLIBM -flto
-mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -zopt -fno-PIE
-no-pie -fvirtual-function-elimination
-fvisibility=hidden -lamdlibm -lflang -lamdalloc

707.ntest_r: Same as 706.stockfish_r

727.cppcheck_r: basepeak = yes

(Continued on next page)

Peak Optimization Flags (Continued)

753.ns3_r: -m64 -std=c++17
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3
-march=znver5 -fveclib=AMDLIBM -flto
-mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt -fno-PIE
-no-pie -fvirtual-function-elimination
-fvisibility=hidden -lamdlibm -lamdalloc -lflang

Benchmarks using both C and C++:

710.omnetpp_r: -m64 -std=c++17 -std=c18
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3
-march=znver5 -fveclib=AMDLIBM -fno-PIE -no-pie -flto
-fstruct-layout=7 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays
-fstrip-mining -mllvm -reduce-array-computations=3 -zopt
-mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-fvirtual-function-elimination -fvisibility=hidden
-lamdlibm -lamdalloc -lflang

721.gcc_r: basepeak = yes

723.llvm_r: -m64 -std=c++17 -std=c18
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver5 -fveclib=AMDLIBM -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt
-mllvm -unroll-threshold=100 -fno-PIE -no-pie
-fvirtual-function-elimination -fvisibility=hidden
-lamdlibm -lflang -lamdalloc

729.abc_r: basepeak = yes

734.vpr_r: Same as 710.omnetpp_r

735.gem5_r: Same as 710.omnetpp_r

750.sealcrypto_r: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.00.html
http://www.spec.org/cpu2026/results/flags/Maginfra-Platform-Settings-amd-V1.1.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.00.xml
http://www.spec.org/cpu2026/results/flags/Maginfra-Platform-Settings-amd-V1.1.xml

Tested with SPEC CPU®2026 v1.0.1 on 2026-08-17 20:35:45-0400.
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