# SPEC CPU®2026 Floating Point Rate Result

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## Maginfra Co., Ltd.

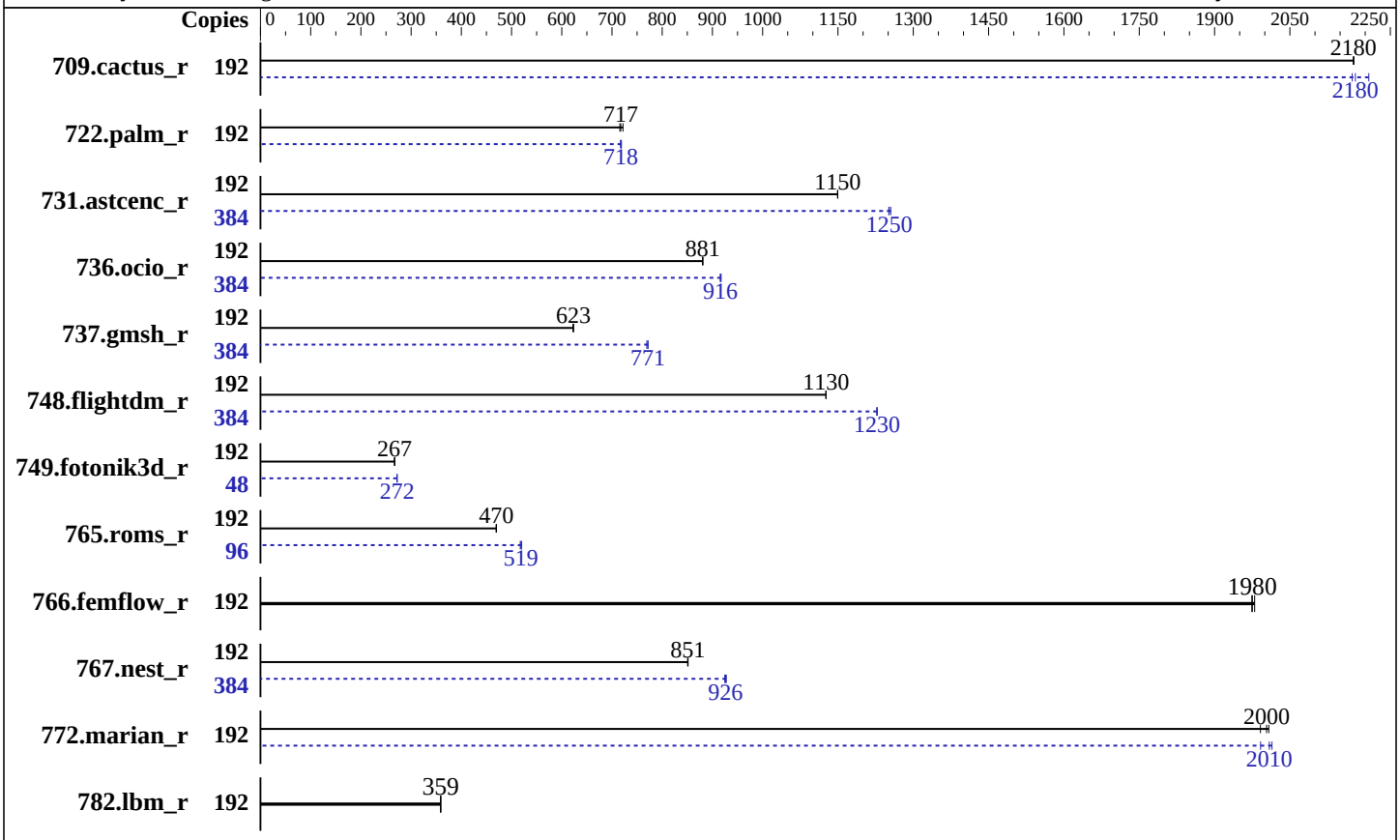
## QR8228-D3 (AMD EPYC 9655)

**SPECrate®2026_fp_base = 862**

**SPECrate®2026_fp_peak = 909**

**CPU2026 License:** 9087
**Test Sponsor:** Maginfra Co., Ltd.
**Tested by:** Maginfra Co., Ltd.

**Test Date:** Jul-2026
**Hardware Availability:** Dec-2025
**Software Availability:** Jan-2026




### Hardware

| | |
|---|---|
| CPU Name: | AMD EPYC 9655 |
| Max MHz: | 4500 |
| Nominal: | 2600 |
| 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: | 384 MB I+D on chip per chip, 32 MB shared / 8 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

| Benchmark | Base | | | | | | | Peak | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 709.cactus_r | 192 | **75.7** | **2180** | 75.7 | 2180 | 75.7 | 2180 | 192 | **75.6** | **2180** | 74.6 | 2210 | 75.8 | 2170 |
| 722.palm_r | 192 | 354 | 716 | 351 | 722 | **353** | **717** | 192 | **353** | **718** | 353 | 719 | 353 | 717 |
| 731.astcenc_r | 192 | **140** | **1150** | 140 | 1150 | 140 | 1150 | 384 | **258** | **1250** | 258 | 1250 | 257 | 1260 |
| 736.ocio_r | 192 | **191** | **881** | 191 | 881 | 191 | 881 | 384 | 366 | 917 | 367 | 916 | **367** | **916** |
| 737.gmsh_r | 192 | 141 | 623 | **141** | **623** | 142 | 622 | 384 | 229 | 769 | **229** | **771** | 228 | 772 |
| 748.flightdm_r | 192 | 122 | 1130 | **122** | **1130** | 122 | 1130 | 384 | 224 | 1230 | 224 | 1230 | **224** | **1230** |
| 749.fotonik3d_r | 192 | 831 | 267 | 832 | 267 | **831** | **267** | 48 | 204 | 272 | **204** | **272** | 204 | 272 |
| 765.roms_r | 192 | 644 | 470 | 644 | 469 | **644** | **470** | 96 | 292 | 517 | **291** | **519** | 291 | 520 |
| 766.femflow_r | 192 | 143 | 1970 | **143** | **1980** | 142 | 1980 | 192 | 143 | 1970 | **143** | **1980** | 142 | 1980 |
| 767.nest_r | 192 | 179 | 851 | **179** | **851** | 179 | 852 | 384 | **329** | **926** | 329 | 925 | 328 | 928 |
| 772.marian_r | 192 | **151** | **2000** | 152 | 1990 | 151 | 2010 | 192 | 151 | 2010 | 152 | 1990 | **151** | **2010** |
| 782.lbm_r | 192 | 307 | 358 | **307** | **359** | 306 | 359 | 192 | 307 | 358 | **307** | **359** | 306 | 359 |

**SPECrate®2026_fp_base = 862**

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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.
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.
```

**(Continued on next page)**

## Operating System Notes (Continued)

```
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 Sat Aug  1 23:45:20 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
```

**(Continued on next page)**

## Platform Notes (Continued)

```
 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
   23:45:20 up  6:15,  1 user,  load average: 130.76, 305.76, 345.97
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                17:32    6:11m 16.29s 15.24s 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) 6189713
  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
```

**(Continued on next page)**

## Platform Notes (Continued)

```
   cpu time                (seconds, -t) unlimited
   max user processes              (-u) 6189713
   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 fprate
 runcpu --configfile amd_rate_aocc510_znver5_B1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode rate --tune base:peak --size test:train:refrate fprate --nopreenv --note-preenv --logfile
    $SPEC/tmp/CPU2026.049/templogs/preenv.fprate.049.0.log --lognum 049.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2026

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9655 96-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 26
    model           : 2
    stepping        : 1
    microcode       : 0xb00215a
    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 0-95
    physical id 1: core ids 0-95
    physical id 0: apicids 0-191
    physical id 1: apicids 256-447
  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
```

**(Continued on next page)**

## Platform Notes (Continued)

```
  CPU(s):                               384
  On-line CPU(s) list:                  0-383
  Vendor ID:                            AuthenticAMD
  Model name:                           AMD EPYC 9655 96-Core Processor
  CPU family:                           26
  Model:                                2
  Thread(s) per core:                   2
  Core(s) per socket:                   96
  Socket(s):                            2
  Stepping:                             1
  Frequency boost:                      enabled
  CPU(s) scaling MHz:                   102%
  CPU max MHz:                          2600.0000
  CPU min MHz:                          1500.0000
  BogoMIPS:                             5192.52
  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:                             768 MiB (24 instances)
  NUMA node(s):                         8
  NUMA node0 CPU(s):                    0-23,192-215
  NUMA node1 CPU(s):                    24-47,216-239
  NUMA node2 CPU(s):                    48-71,240-263
  NUMA node3 CPU(s):                    72-95,264-287
  NUMA node4 CPU(s):                    96-119,288-311
```

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## Platform Notes (Continued)

```
  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     768M   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: 191621 MB
  node 1 cpus: 24-47,216-239
  node 1 size: 193523 MB
  node 1 free: 192132 MB
  node 2 cpus: 48-71,240-263
  node 2 size: 193523 MB
  node 2 free: 192223 MB
  node 3 cpus: 72-95,264-287
  node 3 size: 193523 MB
  node 3 free: 192203 MB
  node 4 cpus: 96-119,288-311
  node 4 size: 193484 MB
  node 4 free: 192171 MB
  node 5 cpus: 120-143,312-335
  node 5 size: 193523 MB
```

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## Platform Notes (Continued)

```
  node 5 free: 192139 MB
  node 6 cpus: 144-167,336-359
  node 6 size: 193523 MB
  node 6 free: 192216 MB
  node 7 cpus: 168-191,360-383
  node 7 size: 193375 MB
  node 7 free: 192079 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:       1584594476 kB

------------------------------------------------------------
10. who -r
  run-level 3 Aug 1 17:29

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

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## Platform Notes (Continued)

```
------------------------------------------------------------
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 310:
    current policy: frequency should be within 1.50 GHz and 2.60 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
  vm.watermark_scale_factor          10
  vm.zone_reclaim_mode                1
```

**(Continued on next page)**

## Platform Notes (Continued)

```
------------------------------------------------------------
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:        QR8228-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
    1x Samsung M321R8GA0PB2-CCPWC 64 GB 2 rank 6400
```

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## Platform Notes (Continued)

```
 ------------------------------------------------------------
 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       | 782.lbm_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++     | 731.astcenc_r(base, peak) 736.ocio_r(base, peak)
        | 748.flightdm_r(base, peak) 766.femflow_r(base, peak)
        | 767.nest_r(base, peak) 772.marian_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  | 709.cactus_r(base, peak) 737.gmsh_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
------------------------------------------------------------------------------

==============================================================================
Fortran | 722.palm_r(base, peak) 749.fotonik3d_r(base, peak) 765.roms_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
```

**(Continued on next page)**

## Compiler Version Notes (Continued)

```
------------------------------------------------------------------------------
```

## Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

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

## Base Portability Flags

736.ocio_r: -fno-finite-math-only
737.gmsh_r: -fno-fast-math
748.flightdm_r: -fno-reciprocal-math
767.nest_r: -fno-finite-math-only

## 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
-ffast-math -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

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 -Wl,-mllvm -Wl,-extra-inliner
-ffast-math -O3 -march=znver5 -fveclib=AMDLIBM -flto
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000

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## Base Optimization Flags (Continued)

C++ benchmarks (continued):
-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lamdalloc
-lflang

Fortran benchmarks:
-m64 -Mstandard -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching
-Wl,-mllvm -Wl,-enable-aggressive-gather=true
-Wl,-mllvm -Wl,-enable-masked-gather-sequence=false -ffast-math -O3
-march=znver5 -fveclib=AMDLIBM -flto -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm -lamdalloc
-lflang

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 -Wl,-mllvm -Wl,-extra-inliner
-ffast-math -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 -lamdlibm -lamdalloc -lflang

## Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

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

## Peak Portability Flags

736.ocio_r: `-fno-finite-math-only`
737.gmsh_r: `-fno-fast-math`
748.flightdm_r: `-fno-reciprocal-math`
767.nest_r: `-fno-finite-math-only`

## Peak Optimization Flags

C benchmarks:

782.lbm_r: `basepeak = yes`

C++ benchmarks:

731.astcenc_r: `-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`
`-Wl,-mllvm -Wl,-extra-inliner -ffast-math -O3`
`-march=znver5 -fveclib=AMDLIBM -flto`
`-mllvm -unroll-threshold=100`
`-mllvm -loop-unswitch-threshold=200000`
`-mllvm -reduce-array-computations=3 -zopt -lamdlibm`
`-lamdalloc -lflang`

736.ocio_r: `Same as 731.astcenc_r`

748.flightdm_r: `Same as 731.astcenc_r`

766.femflow_r: `basepeak = yes`

767.nest_r: `Same as 731.astcenc_r`

772.marian_r: `Same as 731.astcenc_r`

Fortran benchmarks:

722.palm_r: `-m64 -Mstandard`
`-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6`
`-Wl,-mllvm -Wl,-reduce-array-computations=3`
`-Wl,-mllvm -Wl,-enable-X86-prefetching`
`-Wl,-mllvm -Wl,-enable-aggressive-gather=true`
`-Wl,-mllvm -Wl,-enable-masked-gather-sequence=false`
`-ffast-math -O3 -march=znver5 -fveclib=AMDLIBM -flto`
`-Mrecursive -funroll-loops -mllvm -lsr-in-nested-loop`

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# Peak Optimization Flags (Continued)

722.palm_r (continued):
-mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm
-lamdalloc -lflang

749.fotonik3d_r: -m64 -Mstandard
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -ffast-math
-Ofast -march=znver5 -fveclib=AMDLIBM -flto -Mrecursive
-mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm
-lamdalloc -lflang

765.roms_r: Same as 749.fotonik3d_r

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 -Wl,-mllvm -Wl,-extra-inliner
-ffast-math -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 -lamdlibm -lamdalloc -lflang

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


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