# SPEC CPU®2026 Floating Point Rate Result

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## Lenovo Global Technology

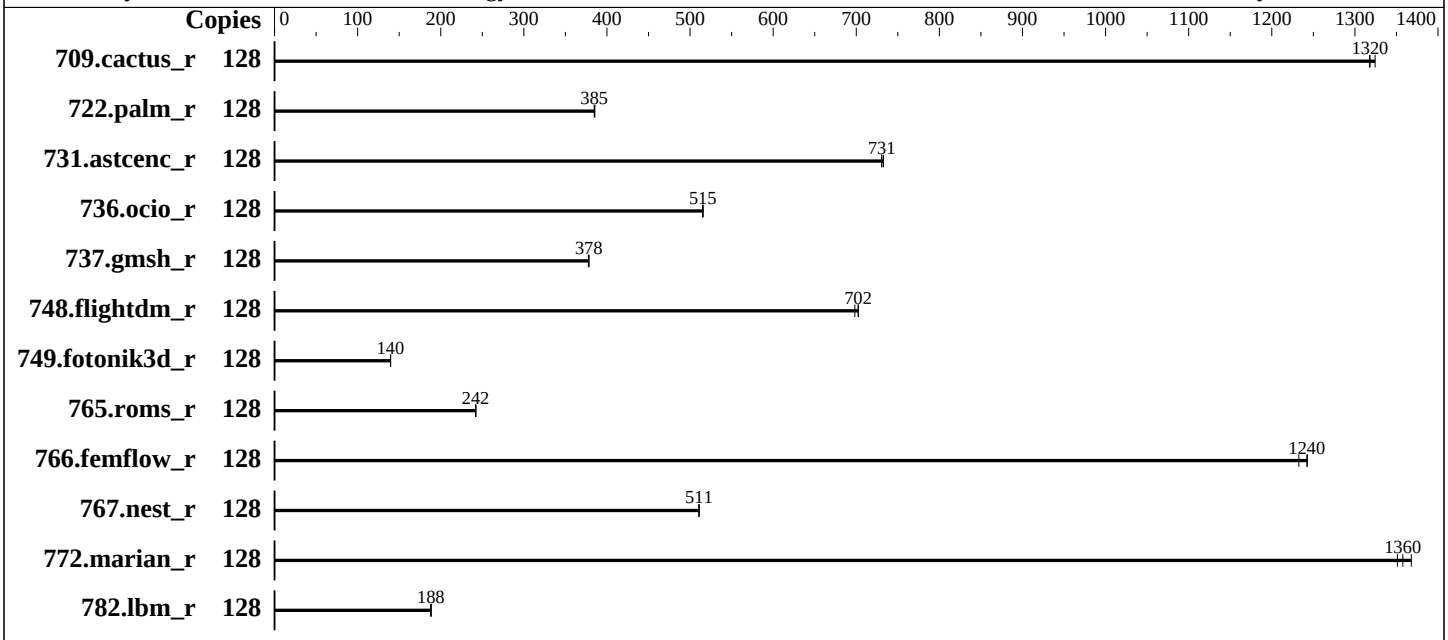
ThinkSystem SD535 V3
(2.70 GHz, AMD EPYC 9755)

SPECrate®2026_fp_base = 506

SPECrate®2026_fp_peak = 506

**CPU2026 License:** 9017
**Test Sponsor:** Lenovo Global Technology
**Tested by:** Lenovo Global Technology

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




### Hardware

| | |
|---|---|
| CPU Name: | AMD EPYC 9755 |
| Max MHz: | 4100 |
| Nominal: | 2700 |
| Enabled: | 128 cores, 1 chip |
| 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: | 512 MB I+D on chip per chip, 32 MB shared / 8 cores |
| Other: | None |
| Memory: | 384 GB (12 x 32 GB 2Rx8 PC5-6400B-R) |
| Storage: | 1 x 960 GB M.2 NVME SSD |
| Cooling: | Air |
| Other: | None |

### Software

| | |
|---|---|
| OS: | SUSE Linux Enterprise Server 15 SP7 Kernel 6.4.0-150700.51-default |
| Compiler: | C/C++/Fortran: Version 5.1.0 of AOCC |
| Compiler Category: | Vendor |
| Firmware: | Lenovo BIOS Version GPE123F 5.40 released Nov-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 | 128 | **83.3** | **1320** | 82.9 | 1320 | 83.4 | 1320 | 128 | **83.3** | **1320** | 82.9 | 1320 | 83.4 | 1320 |
| 722.palm_r | 128 | **439** | **385** | 439 | 385 | 438 | 385 | 128 | **439** | **385** | 439 | 385 | 438 | 385 |
| 731.astcenc_r | 128 | **147** | **731** | 147 | 731 | 147 | 733 | 128 | **147** | **731** | 147 | 731 | 147 | 733 |
| 736.ocio_r | 128 | 217 | 515 | **217** | **515** | 217 | 516 | 128 | 217 | 515 | **217** | **515** | 217 | 516 |
| 737.gmsh_r | 128 | 156 | 378 | 155 | 378 | **155** | **378** | 128 | 156 | 378 | 155 | 378 | **155** | **378** |
| 748.flightdm_r | 128 | 130 | 702 | 131 | 698 | **130** | **702** | 128 | 130 | 702 | 131 | 698 | **130** | **702** |
| 749.fotonik3d_r | 128 | 1060 | 140 | **1060** | **140** | 1060 | 140 | 128 | 1060 | 140 | **1060** | **140** | 1060 | 140 |
| 765.roms_r | 128 | 834 | 242 | 832 | 242 | **833** | **242** | 128 | 834 | 242 | 832 | 242 | **833** | **242** |
| 766.femflow_r | 128 | **151** | **1240** | 152 | 1230 | 151 | 1240 | 128 | **151** | **1240** | 152 | 1230 | 151 | 1240 |
| 767.nest_r | 128 | 199 | 511 | 199 | 510 | **199** | **511** | 128 | 199 | 511 | 199 | 510 | **199** | **511** |
| 772.marian_r | 128 | 148 | 1370 | 150 | 1350 | **149** | **1360** | 128 | 148 | 1370 | 150 | 1350 | **149** | **1360** |
| 782.lbm_r | 128 | **389** | **188** | 389 | 188 | 390 | 188 | 128 | **389** | **188** | 389 | 188 | 390 | 188 |

**SPECrate®2026_fp_base = 506**

**SPECrate®2026_fp_peak = 506**

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.
```

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## 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/cpu2026-0.902.0-amd_aocc510_znver5_A1/amd_rate_aocc510_znver5_A_l
     ib/lib:/home/cpu2026-0.902.0-amd_aocc510_znver5_A1/amd_rate_aocc510_znve
     r5_A_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:
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode
P-State set to Enabled
NUMA Nodes per Socket set to NPS4
SMT Mode set to Disabled
L1 Stride Prefetcher set to Disabled

 Sysinfo program /home/cpu2026-0.902.0-amd_aocc510_znver5_A1/bin/sysinfo
 Rev: 069f95da7e7f5d81b2ce48a82150e54f
 running on localhost Sun Feb  1 17:11:25 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. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. 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
   17:11:25 up  3:25,  1 user,  load average: 47.72, 104.05, 118.64
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT

------------------------------------------------------------
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) 1545837
  max locked memory       (kbytes, -l) 2097152
  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) 1545837
```

**(Continued on next page)**

## Platform Notes (Continued)

```
  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@notty
 /bin/bash ./02.remote_local_SPECcpu_1.02.sh
 /bin/bash ./Run023-compliant-amd-ratefp_base.sh
 python3 ./run_amd_rate_aocc510_znver5_A1.py
 /bin/bash ./amd_rate_aocc510_znver5_A1.sh
 runcpu --config amd_rate_aocc510_znver5_A1.cfg --tune base --reportable --iterations 3 fprate
 runcpu --configfile amd_rate_aocc510_znver5_A1.cfg --tune base --reportable --iterations 3 --nopower
   --runmode rate --tune base --size test:train:refrate fprate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2026.033/templogs/preenv.fprate.033.0.log --lognum 033.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026-0.902.0-amd_aocc510_znver5_A1

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9755 128-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 26
    model           : 2
    stepping        : 1
    microcode       : 0xb002152
    bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso
    TLB size        : 192 4K pages
    cpu cores       : 128
    siblings        : 128
    1 physical ids (chips)
    128 processors (hardware threads)
    physical id 0: core ids
   0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
    240-247
    physical id 0: apicids
   0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
    240-247
 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:
```

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## Platform Notes (Continued)

```
  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):                          128
  On-line CPU(s) list:             0-127
  Vendor ID:                       AuthenticAMD
  Model name:                      AMD EPYC 9755 128-Core Processor
  CPU family:                      26
  Model:                           2
  Thread(s) per core:              1
  Core(s) per socket:              128
  Socket(s):                       1
  Stepping:                        1
  Frequency boost:                 enabled
  CPU(s) scaling MHz:              105%
  CPU max MHz:                     2700.0000
  CPU min MHz:                     1500.0000
  BogoMIPS:                        5391.90
  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:                       6 MiB (128 instances)
  L1i cache:                       4 MiB (128 instances)
  L2 cache:                        128 MiB (128 instances)
  L3 cache:                        512 MiB (16 instances)
  NUMA node(s):                    4
  NUMA node0 CPU(s):               0-31
```

**(Continued on next page)**

## Platform Notes (Continued)

```
   NUMA node1 CPU(s):                    32-63
   NUMA node2 CPU(s):                    64-95
   NUMA node3 CPU(s):                    96-127
   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
                                         disabled; 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       6M   12 Data            1    64        1             64
      L1i       32K       4M    8 Instruction     1    64        1             64
      L2         1M     128M   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: 4 nodes (0-3)
   node 0 cpus: 0-31
   node 0 size: 96306 MB
   node 0 free: 95856 MB
   node 1 cpus: 32-63
   node 1 size: 96759 MB
   node 1 free: 96396 MB
   node 2 cpus: 64-95
   node 2 size: 96759 MB
   node 2 free: 96406 MB
   node 3 cpus: 96-127
   node 3 size: 96661 MB
   node 3 free: 96245 MB
   node distances:
   node   0   1   2   3
     0:  10  12  12  12
     1:  12  10  12  12
     2:  12  12  10  12
```

**(Continued on next page)**

## Platform Notes (Continued)

```
    3:  12  12  12  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       395761856 kB

------------------------------------------------------------
10. who -r
  run-level 3 Feb 1 13:46

------------------------------------------------------------
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 sshd systemd-pstore wicked
                    wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
  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 systemd-boot-check-no-failures
                   systemd-confext systemd-network-generator systemd-sysext systemd-time-wait-sync
                    systemd-timesyncd vncserver@
  generated         ntp_sync
  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=a635862e-6c31-42fc-9f53-c72582e21b20
  splash=silent
  mitigations=auto
  quiet
  security=apparmor

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 72:
    current policy: frequency should be within 1.50 GHz and 2.70 GHz.
                    The governor "performance" may decide which speed to use
```

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## Platform Notes (Continued)

```
                  within this range.
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. 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

------------------------------------------------------------
16. /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

------------------------------------------------------------
17. /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

------------------------------------------------------------
18. OS release
  From /etc/*-release /etc/*-version
```

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## Platform Notes (Continued)

```
   os-release SUSE Linux Enterprise Server 15 SP7

 ------------------------------------------------------------
 19. Disk information
 SPEC is set to: /home/cpu2026-0.902.0-amd_aocc510_znver5_A1
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/nvme0n1p3 xfs   890G   81G  809G  10% /

 ------------------------------------------------------------
 20. /sys/devices/virtual/dmi/id
     Vendor:          Lenovo
     Product:         ThinkSystem SD535 V3
     Product Family: ThinkSystem
     Serial:          1234567890

 ------------------------------------------------------------
 21. 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 SK Hynix HMCG88AHBRA290N 32 GB 2 rank 6400


 ------------------------------------------------------------
 22. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       Lenovo
    BIOS Version:      GPE123F-5.40
    BIOS Date:         11/10/2025
    BIOS Revision:     5.40
    Firmware Revision: 10.10
```

## Compiler Version Notes

```
==============================================================================
C       | 782.lbm_r(base)
------------------------------------------------------------------------------
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)

```
C++     | 731.astcenc_r(base) 736.ocio_r(base) 748.flightdm_r(base)
        | 766.femflow_r(base) 767.nest_r(base) 772.marian_r(base)
------------------------------------------------------------------------------
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) 737.gmsh_r(base)
------------------------------------------------------------------------------
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) 749.fotonik3d_r(base) 765.roms_r(base)
------------------------------------------------------------------------------
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++`

Fortran benchmarks:
`flang`

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

## Base Portability Flags

709.cactus_r: `-DSPEC_LP64`
722.palm_r: `-DSPEC_LP64`
731.astcenc_r: `-DSPEC_LP64`
736.ocio_r: `-fno-finite-math-only -DSPEC_LP64`
737.gmsh_r: `-fno-fast-math -DSPEC_LP64`
748.flightdm_r: `-fno-reciprocal-math -DSPEC_LP64`
749.fotonik3d_r: `-DSPEC_LP64`
765.roms_r: `-DSPEC_LP64`
766.femflow_r: `-DSPEC_LP64`
767.nest_r: `-fno-finite-math-only -DSPEC_LP64`
772.marian_r: `-DSPEC_LP64`
782.lbm_r: `-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,-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
-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
```

**(Continued on next page)**

## 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 -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 Optimization Flags

C benchmarks:

782.lbm_r: basepeak = yes

C++ benchmarks:

731.astcenc_r: basepeak = yes

736.ocio_r: basepeak = yes

748.flightdm_r: basepeak = yes

766.femflow_r: basepeak = yes

767.nest_r: basepeak = yes

772.marian_r: basepeak = yes

Fortran benchmarks:

722.palm_r: basepeak = yes

749.fotonik3d_r: basepeak = yes

765.roms_r: basepeak = yes

Benchmarks using both C and C++:

709.cactus_r: basepeak = yes

**(Continued on next page)**

# Peak Optimization Flags (Continued)

737.gmsh_r: `basepeak = yes`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2026/results/flags/Lenovo-Platform-SPECcpu-Flags-V1.2-Turin-M.html`
`http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2026/results/flags/Lenovo-Platform-SPECcpu-Flags-V1.2-Turin-M.xml`
`http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.xml`


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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.


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