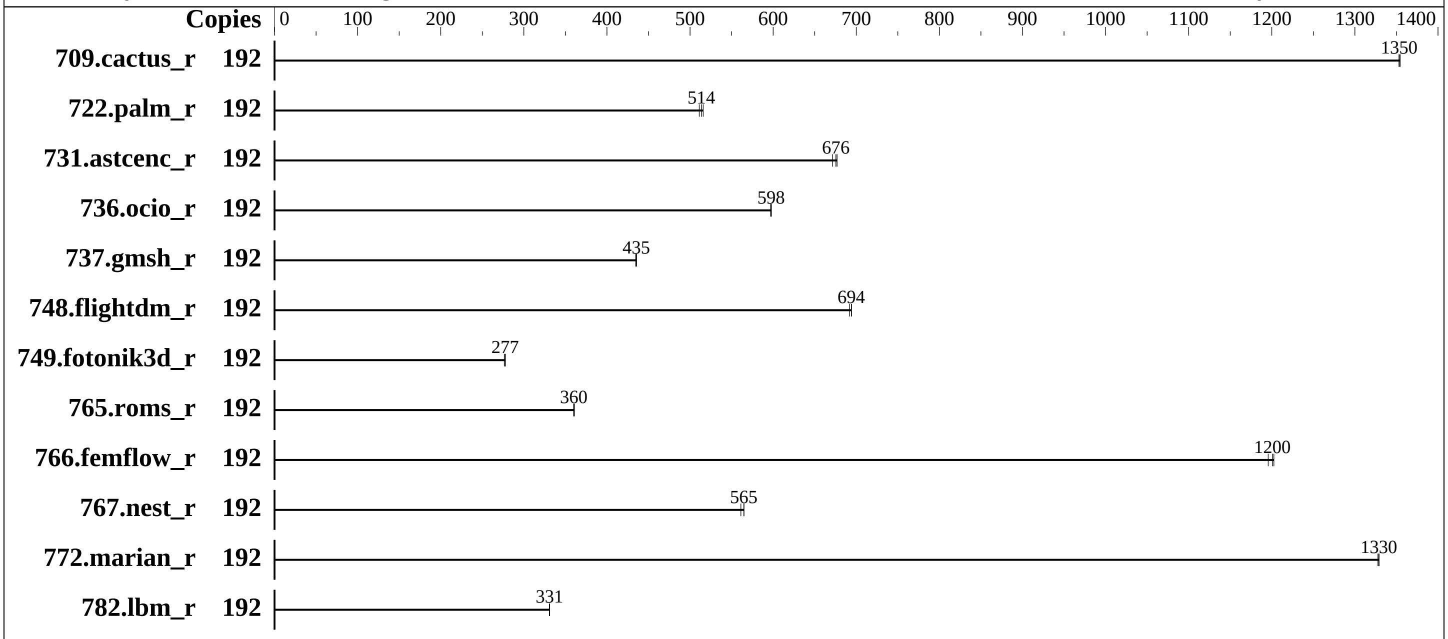
SPEC CPU®2026 Floating Point Rate Result

Fsas Technologies Inc. (Test Sponsor: Fujitsu) PRIMERGY RX2450 M2, AMD EPYC 9455, 3.15 GHz	SPECrate®2026_fp_base = 608 SPECrate®2026_fp_peak = Not Run

CPU2026 License:	19	**Test Date:**	Jul-2026
Test Sponsor:	Fujitsu	**Hardware Availability:**	Jan-2025
Tested by:	Fsas Technologies Inc.	**Software Availability:**	Jan-2026



Hardware

CPU Name:	AMD EPYC 9455
Max MHz:	4400
Nominal:	3150
Enabled:	96 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 / 6 cores
Other:	None
Memory:	768 GB (24 x 32 GB 2Rx8 PC5-6400B-R)
Storage:	1 x SATA SSD, 1.92 TB
Cooling:	Air
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP6 kernel version 6.4.0-150600.23.22-default
Compiler:	C/C++/Fortran: Version 5.1.0 of AOCC
Compiler Category:	Vendor
Firmware:	Fujitsu BIOS Version V5.0.0.35 R2.13.0 for D4129-A1x. Released Aug-2026 tested as V5.0.0.35 R2.11.0 for D4129-A1x Jan-2026
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other:	None
Power Management:	BIOS and OS set to prefer performance at the cost of aditional 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
709.cactus_r	192	**122**	**1350**	122	1350	122	1350							
722.palm_r	192	491	516	496	511	**493**	**514**							
731.astcenc_r	192	**239**	**676**	240	671	238	677							
736.ocio_r	192	281	598	281	597	**281**	**598**							
737.gmsh_r	192	203	435	**202**	**435**	202	436							
748.flightdm_r	192	199	692	198	694	**198**	**694**							
749.fotonik3d_r	192	799	278	**800**	**277**	803	276							
765.roms_r	192	**839**	**360**	840	360	838	361							
766.femflow_r	192	234	1200	**235**	**1200**	236	1200							
767.nest_r	192	271	561	**270**	**565**	270	565							
772.marian_r	192	228	1330	**228**	**1330**	228	1330							
782.lbm_r	192	**333**	**331**	332	331	333	331							

SPECrate®2026_fp_base = 608

SPECrate®2026_fp_peak = Not Run

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.
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
```

(Continued on next page)

Operating System Notes (Continued)

```
'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/Benchmark/cpu2026-1.0.1/amd_rate_aocc510_znver5_B_lib/lib:/home/B
     enchmark/cpu2026-1.0.1/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:
Determinism Slider = Power
TDP Control = Manual
TDP Limit = 300
Package Power Limit Control = Manual
Package Power Limit = 300
Power Profile Selection = High Performance
NUMA nodes per socket = NPS4
Probe Filter Organization = Shared
Interleaving Region Size = 1K Region Size
FAN Control = Full

 Sysinfo program /home/Benchmark/cpu2026-1.0.1/bin/sysinfo
 Rev: 779ab21020787073335a329f3a45e2cd
 running on localhost Tue Jul 14 01:44:57 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
```

(Continued on next page)

Platform Notes (Continued)

```
 8. numactl --hardware
 9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
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 6.4.0-150600.23.22-default #1 SMP PREEMPT_DYNAMIC Fri Sep 13 10:42:50 UTC 2024 (5c05eeb) x86_64

------------------------------------------------------------
2. w
   01:44:57 up  3:40,  2 users,  load average: 99.59, 166.35, 181.46
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                22:08    3:36m  2.41s  1.37s python3
  ./run_amd_rate_aocc510_znver5_B1_fprate.py
  root     pts/0    192.168.10.106   22:05    3:37m  0.03s  0.03s -bash

------------------------------------------------------------
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) 3090640
  max locked memory       (kbytes, -l) 2048
  max memory size         (kbytes, -m) unlimited
  open files                      (-n) 65536
  pipe size            (512 bytes, -p) 8
  POSIX message queues     (bytes, -q) 819200
  real-time priority              (-r) 0
  stack size              (kbytes, -s) unlimited
```

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Platform Notes (Continued)

```
    cpu time               (seconds, -t) unlimited
    max user processes              (-u) 3090640
    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
   -bash
   python3 ./run_amd_rate_aocc510_znver5_B1_fprate.py
   runcpu --config amd_rate_aocc510_znver5_B1.cfg --tune base --reportable --iterations 3 fprate
   runcpu --configfile amd_rate_aocc510_znver5_B1.cfg --tune base --reportable --iterations 3 --nopower
     --runmode rate --tune base --size test:train:refrate fprate --nopreenv --note-preenv --logfile
     $SPEC/tmp/CPU2026.001/templogs/preenv.fprate.001.0.log --lognum 001.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
  $SPEC = /home/Benchmark/cpu2026-1.0.1

  ------------------------------------------------------------
  6. /proc/cpuinfo
      model name      : AMD EPYC 9455 48-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
      TLB size        : 192 4K pages
      cpu cores       : 48
      siblings        : 96
      2 physical ids (chips)
      192 processors (hardware threads)
      physical id 0: core ids 0-5,8-13,16-21,24-29,32-37,40-45,48-53,56-61
      physical id 1: core ids 0-5,8-13,16-21,24-29,32-37,40-45,48-53,56-61
      physical id 0: apicids 0-11,16-27,32-43,48-59,64-75,80-91,96-107,112-123
      physical id 1: apicids 128-139,144-155,160-171,176-187,192-203,208-219,224-235,240-251
    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 2.39.3:
    Architecture:                       x86_64
    CPU op-mode(s):                     32-bit, 64-bit
    Address sizes:                      52 bits physical, 57 bits virtual
```

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Platform Notes (Continued)

```
Byte Order:                      Little Endian
CPU(s):                          192
On-line CPU(s) list:             0-191
Vendor ID:                       AuthenticAMD
BIOS Vendor ID:                  Advanced Micro Devices, Inc.
Model name:                      AMD EPYC 9455 48-Core Processor
BIOS Model name:                 AMD EPYC 9455 48-Core Processor                 Unknown CPU @ 3.1GHz
BIOS CPU family:                 107
CPU family:                      26
Model:                           2
Thread(s) per core:              2
Core(s) per socket:              48
Socket(s):                       2
Stepping:                        1
Frequency boost:                 enabled
CPU(s) scaling MHz:              72%
CPU max MHz:                     4411.2300
CPU min MHz:                     1500.0000
BogoMIPS:                        6290.58
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 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 amd_lbr_pmc_freeze
Virtualization:                  AMD-V
L1d cache:                       4.5 MiB (96 instances)
L1i cache:                       3 MiB (96 instances)
L2 cache:                        96 MiB (96 instances)
L3 cache:                        512 MiB (16 instances)
NUMA node(s):                    8
NUMA node0 CPU(s):               0-11,96-107
NUMA node1 CPU(s):               12-23,108-119
```

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Platform Notes (Continued)

```
  NUMA node2 CPU(s):                    24-35,120-131
  NUMA node3 CPU(s):                    36-47,132-143
  NUMA node4 CPU(s):                    48-59,144-155
  NUMA node5 CPU(s):                    60-71,156-167
  NUMA node6 CPU(s):                    72-83,168-179
  NUMA node7 CPU(s):                    84-95,180-191
  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:   Not affected
  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     4.5M   12 Data            1    64        1             64
     L1i       32K       3M    8 Instruction     1    64        1             64
     L2         1M      96M   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: 0-11,96-107
  node 0 size: 95838 MB
  node 0 free: 94790 MB
  node 1 cpus: 12-23,108-119
  node 1 size: 96761 MB
  node 1 free: 95664 MB
  node 2 cpus: 24-35,120-131
  node 2 size: 96761 MB
  node 2 free: 95824 MB
  node 3 cpus: 36-47,132-143
  node 3 size: 96761 MB
  node 3 free: 95902 MB
  node 4 cpus: 48-59,144-155
  node 4 size: 96761 MB
```

(Continued on next page)

Platform Notes (Continued)

```
    node 4 free: 95928 MB
    node 5 cpus: 60-71,156-167
    node 5 size: 96761 MB
    node 5 free: 95954 MB
    node 6 cpus: 72-83,168-179
    node 6 size: 96761 MB
    node 6 free: 95951 MB
    node 7 cpus: 84-95,180-191
    node 7 size: 96278 MB
    node 7 free: 95447 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:       791230668 kB

  ------------------------------------------------------------
  10. who -r
    run-level 3 Jul 13 22:04

  ------------------------------------------------------------
  11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
    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
                     iscsi issue-generator kbdsettings kdump kdump-early kdump-notify klog lvm2-monitor nscd
                     postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore virtqemud 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 dnsmasq ebtables exchange-bmc-os-info
                     firewalld fsidd gpm grub2-once haveged hwloc-dump-hwdata ipmi ipmievd iscsi-init iscsid
                     issue-add-ssh-keys kexec-load ksm kvm_stat libvirt-guests lunmask man-db-create multipathd
                     nfs nfs-blkmap nfs-server nfsserver rpcbind rpmconfigcheck rsyncd serial-getty@
```

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Platform Notes (Continued)

```
                 smartd_generate_opts snmpd snmptrapd strongswan strongswan-starter svnserve
                 systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-nspawn@
                 systemd-sysext systemd-time-wait-sync systemd-timesyncd tcsd udisks2 virtinterfaced
                 virtlockd virtlogd virtnetworkd virtnodedevd virtnwfilterd virtsecretd virtstoraged
                 vncserver@
  indirect       pcscd systemd-userdbd tftp wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.23.22-default
  root=UUID=0c0fd396-12b8-460e-af5f-2d1dba73ae32
  splash=silent
  mitigations=auto
  quiet
  security=apparmor
  crashkernel=384M,high
  crashkernel=72M,low

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 142:
    current policy: frequency should be within 1.50 GHz and 3.15 GHz.
                    The governor "performance" may decide which speed to use
                    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
```

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Platform Notes (Continued)

```
  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
  os-release SUSE Linux Enterprise Server 15 SP6

------------------------------------------------------------
19. Disk information
SPEC is set to: /home/Benchmark/cpu2026-1.0.1
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda3      xfs   1.4T  161G  1.3T  12% /home

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         FUJITSU
    Product:        PRIMERGY RX2450 M2
    Product Family: SERVER
    Serial:         xxxxxxxxxx

------------------------------------------------------------
21. dmidecode
  Additional information from dmidecode 3.4 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 HMCG88AHBRA478N 32 GB 2 rank 6400
    12x Samsung M321R4GA3EB2-CCPKF 32 GB 2 rank 6400
```

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Platform Notes (Continued)

```
 ------------------------------------------------------------
 22. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       FUJITSU // American Megatrends Inc.
    BIOS Version:      V5.0.0.35 R2.11.0 for D4129-A1x
    BIOS Date:         01/29/2026
    BIOS Revision:     2.11
    Firmware Revision: 2.47
```

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
------------------------------------------------------------------------------

==============================================================================
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
```

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Compiler Version Notes (Continued)

```
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

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
```

(Continued on next page)

Base Optimization Flags (Continued)

C++ benchmarks (continued):
-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

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/Fujitsu-Platform-Settings-V1.0-Turin-RevF.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/Fujitsu-Platform-Settings-V1.0-Turin-RevF.xml

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