SPEC CPU®2026 Floating Point Rate Result

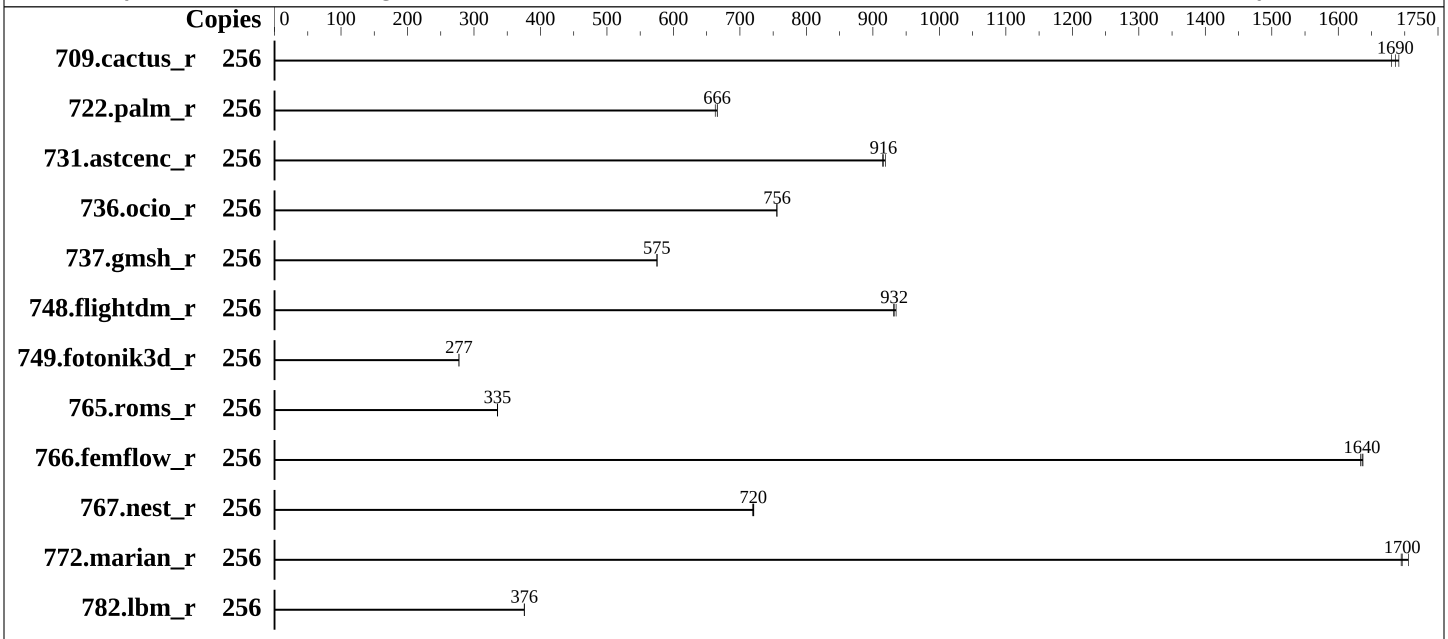
Fsas Technologies Inc.
(Test Sponsor: Fujitsu)
PRIMERGY RX2450 M2,
AMD EPYC 9555, 3.20 GHz

SPECrate®2026_fp_base = 745

SPECrate®2026_fp_peak = Not Run

CPU2026 License: 19
Test Sponsor: Fujitsu
Tested by: Fsas Technologies Inc.

Test Date: Aug-2026
Hardware Availability: Jan-2025
Software Availability: Jan-2026



Hardware

CPU Name:	AMD EPYC 9555
Max MHz:	4400
Nominal:	3200
Enabled:	128 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 / 8 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	256	130	1690	131	1680	**130**	**1690**							
722.palm_r	256	**507**	**666**	507	666	510	663							
731.astcenc_r	256	**235**	**916**	234	919	235	914							
736.ocio_r	256	296	756	297	755	**296**	**756**							
737.gmsh_r	256	**204**	**575**	204	575	204	576							
748.flightdm_r	256	196	935	197	931	**197**	**932**							
749.fotonik3d_r	256	1068	277	1067	277	**1067**	**277**							
765.roms_r	256	**1203**	**335**	1203	335	1201	336							
766.femflow_r	256	229	1640	**230**	**1640**	230	1630							
767.nest_r	256	**282**	**720**	282	719	282	721							
772.marian_r	256	**238**	**1700**	237	1710	239	1690							
782.lbm_r	256	390	376	391	376	**390**	**376**							

SPECrate®2026_fp_base = 745

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 = 400
Package Power Limit Control = Manual
Package Power Limit = 400
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 Thu Aug  6 13:50:26 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
   13:50:26 up 6 min,  2 users,  load average: 0.28, 0.23, 0.15
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                13:48   26.00s  3.89s  2.83s python3
  ./run_amd_rate_aocc510_znver5_B1_fprate.py
  root     pts/0    192.168.10.106   13:49   42.00s  0.04s  0.04s -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) 3090429
  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
```

(Continued on next page)

Platform Notes (Continued)

```
  cpu time               (seconds, -t) unlimited
  max user processes              (-u) 3090429
  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/CPU2026.002/templogs/preenv.fprate.002.0.log --lognum 002.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/Benchmark/cpu2026-1.0.1

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9555 64-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       : 64
    siblings        : 128
    2 physical ids (chips)
    256 processors (hardware threads)
    physical id 0: core ids 0-63
    physical id 1: core ids 0-63
    physical id 0: apicids 0-127
    physical id 1: apicids 128-255
  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
```

(Continued on next page)

Platform Notes (Continued)

```
Byte Order:                      Little Endian
CPU(s):                          256
On-line CPU(s) list:             0-255
Vendor ID:                       AuthenticAMD
BIOS Vendor ID:                  Advanced Micro Devices, Inc.
Model name:                      AMD EPYC 9555 64-Core Processor
BIOS Model name:                 AMD EPYC 9555 64-Core Processor                Unknown CPU @ 3.2GHz
BIOS CPU family:                 107
CPU family:                      26
Model:                           2
Thread(s) per core:              2
Core(s) per socket:              64
Socket(s):                       2
Stepping:                        1
Frequency boost:                 enabled
CPU(s) scaling MHz:              73%
CPU max MHz:                     4409.3750
CPU min MHz:                     1500.0000
BogoMIPS:                        6390.29
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:                       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):                    8
NUMA node0 CPU(s):               0-15,128-143
NUMA node1 CPU(s):               16-31,144-159
```

(Continued on next page)

Platform Notes (Continued)

```
  NUMA node2 CPU(s):                     32-47,160-175
  NUMA node3 CPU(s):                     48-63,176-191
  NUMA node4 CPU(s):                     64-79,192-207
  NUMA node5 CPU(s):                     80-95,208-223
  NUMA node6 CPU(s):                     96-111,224-239
  NUMA node7 CPU(s):                     112-127,240-255
  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       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: 8 nodes (0-7)
  node 0 cpus: 0-15,128-143
  node 0 size: 95874 MB
  node 0 free: 95346 MB
  node 1 cpus: 16-31,144-159
  node 1 size: 96721 MB
  node 1 free: 96269 MB
  node 2 cpus: 32-47,160-175
  node 2 size: 96759 MB
  node 2 free: 96215 MB
  node 3 cpus: 48-63,176-191
  node 3 size: 96759 MB
  node 3 free: 95997 MB
  node 4 cpus: 64-79,192-207
  node 4 size: 96759 MB
```

(Continued on next page)

Platform Notes (Continued)

```
    node 4 free: 96283 MB
    node 5 cpus: 80-95,208-223
    node 5 size: 96759 MB
    node 5 free: 96261 MB
    node 6 cpus: 96-111,224-239
    node 6 size: 96759 MB
    node 6 free: 96263 MB
    node 7 cpus: 112-127,240-255
    node 7 size: 96239 MB
    node 7 free: 95772 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:       791176532 kB

  ------------------------------------------------------------
  10. who -r
    run-level 3 Aug 6 13:44

  ------------------------------------------------------------
  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 60:
    current policy: frequency should be within 1.50 GHz and 3.20 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  195G  1.3T  14% /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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