SPEC CPU®2017 Integer Rate Result

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Supermicro

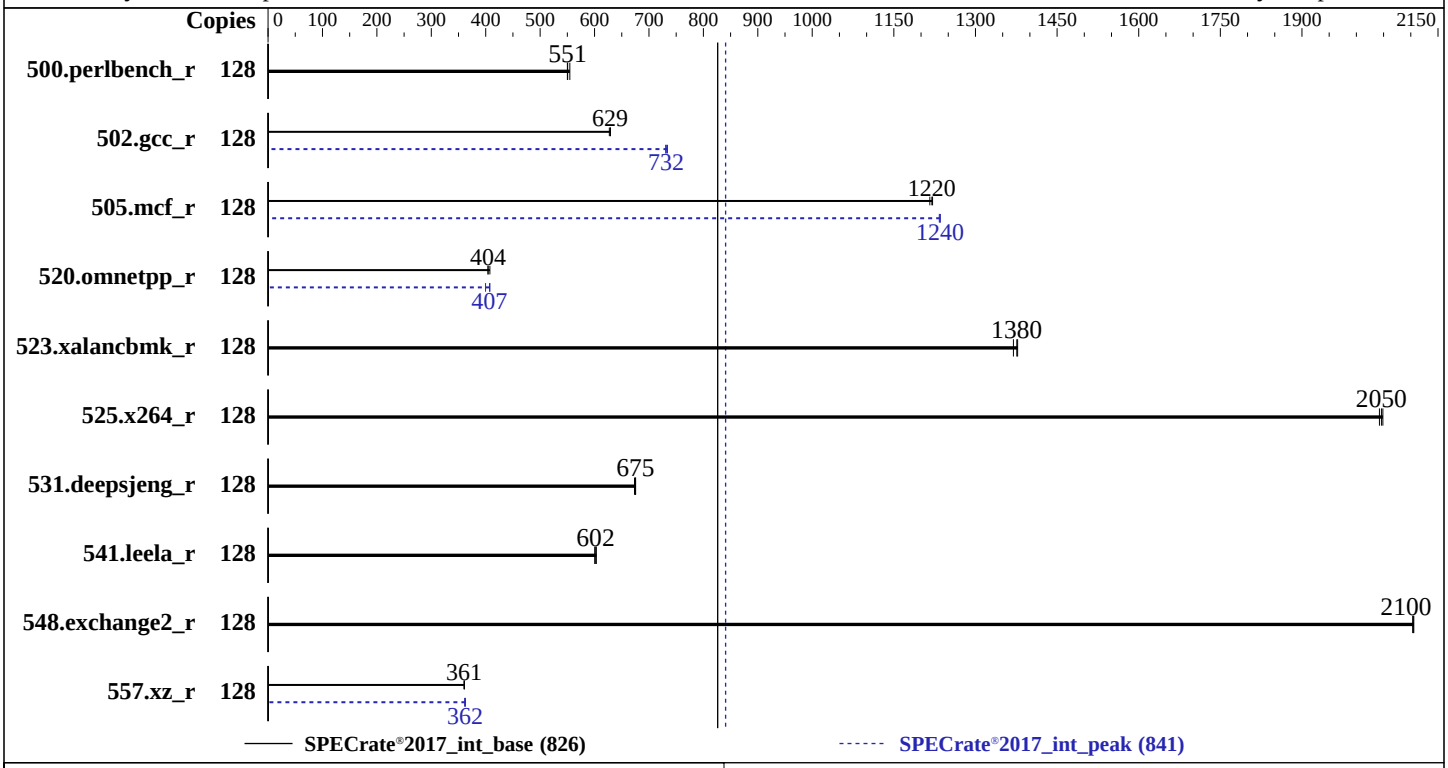
A+ Server AS -5126GS-TNRT2
(H14DSG-O-CPU , AMD EPYC 9335)

SPECrate®2017_int_base = 826

SPECrate®2017_int_peak = 841

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: May-2026
Hardware Availability: Oct-2024
Software Availability: Apr-2026



Hardware

CPU Name:	AMD EPYC 9335
Max MHz:	4400
Nominal:	3000
Enabled:	64 cores, 2 chips, 2 threads/core
Orderable:	2 chips
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	1 MB I+D on chip per core
L3:	128 MB I+D on chip per chip, 32 MB shared / 8 cores
Other:	None
Memory:	2304 GB (24 x 96 GB 2Rx4 PC5-6400B-R)
Storage:	1 x 960 GB NVMe SSD
Other:	CPU Cooling: Air

Software

OS:	Ubuntu 24.04.4 LTS Kernel 6.8.0-111-generic
Compiler:	C/C++/Fortran: Version 5.0.0 of AOCC
Parallel:	No
Firmware:	Version 1.9 released Jan-2026
File System:	ext4
System State:	Run level 5 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-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
500.perlbench_r	128	367	555	370	550	**370**	**551**	128	367	555	370	550	**370**	**551**
502.gcc_r	128	288	629	**288**	**629**	289	627	128	247	734	**248**	**732**	248	731
505.mcf_r	128	169	1220	170	1220	**170**	**1220**	128	167	1240	**167**	**1240**	168	1230
520.omnetpp_r	128	**415**	**404**	412	408	416	404	128	420	400	**412**	**407**	412	408
523.xalancbmk_r	128	98.1	1380	**98.2**	**1380**	98.7	1370	128	98.1	1380	**98.2**	**1380**	98.7	1370
525.x264_r	128	109	2050	110	2040	**110**	**2050**	128	109	2050	110	2040	**110**	**2050**
531.deepsjeng_r	128	**217**	**675**	217	675	218	673	128	**217**	**675**	217	675	218	673
541.leela_r	128	**352**	**602**	351	603	353	600	128	**352**	**602**	351	603	353	600
548.exchange2_r	128	**159**	**2100**	159	2100	159	2110	128	**159**	**2100**	159	2100	159	2110
557.xz_r	128	**383**	**361**	384	360	383	361	128	382	361	**382**	**362**	381	363

SPECrate®2017_int_base = 826

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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.
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/cpu2017/amd_rate_aocc500_znver5_A_lib/lib:/home/cpu2017/amd_rate_aocc500_znver5_A_lib/lib32:"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)
is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)
is mitigated in the system as tested and documented.
```

Platform Notes

```
BIOS settings:
NUMA Nodes Per Socket = NPS4
Determinism Control = Manual
Determinism Enable = Power
TDP control = Manual
TDP = 240
Package Power Limit Control = Manual
Package Power Limit = 240
TSME = Disabled
Memory Target Speed = DDR6400

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on smc Fri May  8 03:03:15 2026

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

 ------------------------------------------------------------
 Table of contents
 ------------------------------------------------------------
  1. uname -a
  2. w
  3. Username
  4. ulimit -a
  5. sysinfo process ancestry
  6. /proc/cpuinfo
  7. lscpu
  8. numactl --hardware
  9. /proc/meminfo
 10. who -r
 11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.12)
 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
```

(Continued on next page)

Platform Notes (Continued)

```
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -a
  Linux smc 6.8.0-111-generic #111-Ubuntu SMP PREEMPT_DYNAMIC Sat Apr 11 23:16:02 UTC 2026 x86_64 x86_64
  x86_64 GNU/Linux

------------------------------------------------------------
2. w
   03:03:15 up 9 min,  1 user,  load average: 0.00, 0.03, 0.04
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU  WHAT
  smc      tty1     -                02:56   10.00s  0.07s  0.06s sudo su -

------------------------------------------------------------
3. Username
  From environment variable $USER:  root
  From the command 'logname':       smc

------------------------------------------------------------
4. ulimit -a
  time(seconds)        unlimited
  file(blocks)         unlimited
  data(kbytes)         unlimited
  stack(kbytes)        unlimited
  coredump(blocks)     0
  memory(kbytes)       unlimited
  locked memory(kbytes) 2097152
  process              9287123
  nofiles              1024
  vmemory(kbytes)      unlimited
  locks                unlimited
  rtprio               0

------------------------------------------------------------
5. sysinfo process ancestry
 /sbin/init
 /bin/login -p --
 -bash
 sudo su -
 sudo su -
 su -
 -bash
 python3 ./run_amd_rate_aocc500_znver5_A1.py
 /bin/bash ./amd_rate_aocc500_znver5_A1.sh
 runcpu --config amd_rate_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 intrate
 runcpu --configfile amd_rate_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
   --runmode rate --tune base:peak --size test:train:refrate intrate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9335 32-Core Processor
    vendor_id       : AuthenticAMD
```

(Continued on next page)

Platform Notes (Continued)

```
     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       : 32
     siblings        : 64
     2 physical ids (chips)
     128 processors (hardware threads)
     physical id 0: core ids 0-31
     physical id 1: core ids 0-31
     physical id 0: apicids 0-63
     physical id 1: apicids 64-127
   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
   Byte Order:                           Little Endian
   CPU(s):                               128
   On-line CPU(s) list:                  0-127
   Vendor ID:                            AuthenticAMD
   BIOS Vendor ID:                       Advanced Micro Devices, Inc.
   Model name:                           AMD EPYC 9335 32-Core Processor
   BIOS Model name:                      AMD EPYC 9335 32-Core Processor                Unknown CPU @
                                         3.0GHz
   BIOS CPU family:                      107
   CPU family:                           26
   Model:                                2
   Thread(s) per core:                   2
   Core(s) per socket:                   32
   Socket(s):                            2
   Stepping:                             1
   Frequency boost:                      enabled
   CPU(s) scaling MHz:                   70%
   CPU max MHz:                          4420.8979
   CPU min MHz:                          1500.0000
   BogoMIPS:                             5999.82
   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
```

(Continued on next page)

Platform Notes (Continued)

```
                                    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 srso_user_kernel_no
  Virtualization:                   AMD-V
  L1d cache:                        3 MiB (64 instances)
  L1i cache:                        2 MiB (64 instances)
  L2 cache:                         64 MiB (64 instances)
  L3 cache:                         256 MiB (8 instances)
  NUMA node(s):                     8
  NUMA node0 CPU(s):                0-7,64-71
  NUMA node1 CPU(s):                8-15,72-79
  NUMA node2 CPU(s):                16-23,80-87
  NUMA node3 CPU(s):                24-31,88-95
  NUMA node4 CPU(s):                32-39,96-103
  NUMA node5 CPU(s):                40-47,104-111
  NUMA node6 CPU(s):                48-55,112-119
  NUMA node7 CPU(s):                56-63,120-127
  Vulnerability Gather data sampling:      Not affected
  Vulnerability Indirect target selection: 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; PBRSB-eIBRS Not affected; BHI Not affected
  Vulnerability Srbds:                     Not affected
  Vulnerability Tsa:                       Not affected
  Vulnerability Tsx async abort:           Not affected
  Vulnerability Vmscape:                   Not affected

From lscpu --cache:
     NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
     L1d       48K       3M   12 Data            1    64        1             64
     L1i       32K       2M    8 Instruction     1    64        1             64
     L2         1M      64M   16 Unified         2  1024        1             64
     L3        32M     256M   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: 0-7,64-71
  node 0 size: 289874 MB
  node 0 free: 289243 MB
  node 1 cpus: 8-15,72-79
  node 1 size: 290298 MB
  node 1 free: 289961 MB
  node 2 cpus: 16-23,80-87
  node 2 size: 290298 MB
  node 2 free: 289989 MB
  node 3 cpus: 24-31,88-95
```

(Continued on next page)

Platform Notes (Continued)

```
  node 3 size: 290298 MB
  node 3 free: 289690 MB
  node 4 cpus: 32-39,96-103
  node 4 size: 290298 MB
  node 4 free: 289937 MB
  node 5 cpus: 40-47,104-111
  node 5 size: 290298 MB
  node 5 free: 289974 MB
  node 6 cpus: 48-55,112-119
  node 6 size: 290254 MB
  node 6 free: 289892 MB
  node 7 cpus: 56-63,120-127
  node 7 size: 290239 MB
  node 7 free: 289932 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:       2377585368 kB

------------------------------------------------------------
10. who -r
  run-level 5 May 8 02:54

------------------------------------------------------------
11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.12)
  Default Target  Status
  graphical       running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          ModemManager apparmor apport blk-availability cloud-config cloud-final cloud-init
                   cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
                   grub-common grub-initrd-fallback keyboard-setup lm-sensors lvm2-monitor multipathd
                   networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog secureboot-db setvtrgb
                   sysstat systemd-networkd systemd-networkd-wait-online systemd-pstore systemd-resolved
                   systemd-timesyncd thermald tuned ua-reboot-cmds ubuntu-advantage udisks2 ufw vgauth
  enabled-runtime  netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
  disabled         console-getty debug-shell ipmievd iscsid nftables rsync serial-getty@ ssh
                   systemd-boot-check-no-failures systemd-confext systemd-network-generator
                   systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code
                   systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy
                   systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysext
                   systemd-time-wait-sync upower
  generated        openipmi
  indirect         systemd-sysupdate systemd-sysupdate-reboot uuidd
  masked           cryptdisks cryptdisks-early hwclock multipath-tools-boot screen-cleanup sudo x11-common

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
```

(Continued on next page)

Platform Notes (Continued)

```
  BOOT_IMAGE=/vmlinuz-6.8.0-111-generic
  root=/dev/mapper/ubuntu--vg-ubuntu--lv
  ro
  nomodeset

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 34:
    current policy: frequency should be within 1.50 GHz and 3.00 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes
      Boost States: 0
      Total States: 3
      Pstate-P0:  3000MHz

------------------------------------------------------------
15. tuned-adm active
  Current active 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

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

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Platform Notes (Continued)

```
------------------------------------------------------------
19. OS release
  From /etc/*-release /etc/*-version
  os-release Ubuntu 24.04.4 LTS

------------------------------------------------------------
20. Disk information
SPEC is set to: /home/cpu2017
  Filesystem                     Type  Size  Used Avail Use% Mounted on
  /dev/mapper/ubuntu--vg-ubuntu--lv ext4  877G   17G  824G   2% /

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         Supermicro
    Product:        Super Server
    Product Family: Family
    Serial:         0123456789

------------------------------------------------------------
22. dmidecode
  Additional information from dmidecode 3.5 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:
    24x Micron Technology MTC40F204WS1RC64BC1 UXCC 96 GB 2 rank 6400


------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       American Megatrends International, LLC.
   BIOS Version:      1.9
   BIOS Date:         01/23/2026
   BIOS Revision:     5.35
```

Compiler Version Notes

```
==============================================================================================================
C       | 502.gcc_r(peak)
--------------------------------------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(base, peak)
--------------------------------------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
--------------------------------------------------------------------------------------------------------------

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

(Continued on next page)

Compiler Version Notes (Continued)

```
C       | 502.gcc_r(peak)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
------------------------------------------------------------------------------

==============================================================================
C       | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
        | 557.xz_r(base, peak)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
------------------------------------------------------------------------------

==============================================================================
C++     | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
        | 541.leela_r(base, peak)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
------------------------------------------------------------------------------

==============================================================================
Fortran | 548.exchange2_r(base, peak)
------------------------------------------------------------------------------
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

Fortran benchmarks:
`flang`

Base Portability Flags

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LINUX -DSPEC_LP64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

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

C++ benchmarks:
-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-do-block-reorder=advanced -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -flto -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt -fno-PIE -no-pie
-fvirtual-function-elimination -fvisibility=hidden
-mllvm -do-block-reorder=advanced -lamdlibm -lflang -lamdalloc-ext
-ldl

Fortran benchmarks:
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -flto
-fepilog-vectorization-of-inductions -mllvm -optimize-strided-mem-cost
-floop-transform -mllvm -unroll-aggressive -mllvm -unroll-threshold=500
-lamdlibm -lflang -lamdalloc -ldl

Base Other Flags

C benchmarks:
`-Wno-unused-command-line-argument`

C++ benchmarks:
`-Wno-unused-command-line-argument`

Fortran benchmarks:
`-Wno-unused-command-line-argument`

Peak Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

Fortran benchmarks:
`flang`

Peak Portability Flags

500.perlbench_r: `-DSPEC_LINUX_X64 -DSPEC_LP64`
502.gcc_r: `-D_FILE_OFFSET_BITS=64`
505.mcf_r: `-DSPEC_LP64`
520.omnetpp_r: `-DSPEC_LP64`
523.xalancbmk_r: `-DSPEC_LINUX -DSPEC_LP64`
525.x264_r: `-DSPEC_LP64`
531.deepsjeng_r: `-DSPEC_LP64`
541.leela_r: `-DSPEC_LP64`
548.exchange2_r: `-DSPEC_LP64`
557.xz_r: `-DSPEC_LP64`

Peak Optimization Flags

C benchmarks:

500.perlbench_r: `basepeak = yes`

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Peak Optimization Flags (Continued)

502.gcc_r: `-m32 -flto -Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather -Wl,-mllvm -Wl,-extra-inliner -z muldefs -Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math -fstruct-layout=7 -mllvm -unroll-threshold=50 -fremap-arrays -fstrip-mining -mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3 -zopt -fgnu89-inline -lamdalloc`

505.mcf_r: `-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6 -Wl,-mllvm -Wl,-reduce-array-computations=3 -Wl,-mllvm -Wl,-extra-inliner -Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=7 -mllvm -unroll-threshold=50 -fremap-arrays -fstrip-mining -mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3 -zopt -lamdlibm -lflang -lamdalloc-ext -ldl`

525.x264_r: `basepeak = yes`

557.xz_r: `-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6 -Wl,-mllvm -Wl,-reduce-array-computations=3 -Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather -Wl,-mllvm -Wl,-extra-inliner -Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=7 -mllvm -unroll-threshold=50 -fremap-arrays -fstrip-mining -mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3 -zopt -lamdlibm -lflang -lamdalloc-ext -ldl`

C++ benchmarks:

520.omnetpp_r: `-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6 -Wl,-mllvm -Wl,-reduce-array-computations=3 -Wl,-mllvm -Wl,-do-block-reorder=advanced -Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math -flto -mllvm -unroll-threshold=100 -mllvm -reduce-array-computations=3 -zopt -fno-PIE -no-pie -fvirtual-function-elimination -fvisibility=hidden -mllvm -do-block-reorder=advanced -lamdlibm -lamdalloc-ext -ldl`

523.xalancbmk_r: `basepeak = yes`

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Peak Optimization Flags (Continued)

531.deepsjeng_r: `basepeak = yes`

541.leela_r: `basepeak = yes`

Fortran benchmarks:

548.exchange2_r: `basepeak = yes`

Peak Other Flags

C benchmarks (except as noted below):
`-Wno-unused-command-line-argument`

502.gcc_r: `-L/usr/lib32 -Wno-unused-command-line-argument`
`-L/home/work/cpu2017/v119/aocc5/1316/amd_rate_aocc500_znver5_A_lib/lib32`

C++ benchmarks:
`-Wno-unused-command-line-argument`

Fortran benchmarks:
`-Wno-unused-command-line-argument`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.html`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Turin-revH.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.xml`
`http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Turin-revH.xml`

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