# SPEC CPU®2017 Integer Rate Result

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## New H3C Technologies Co., Ltd.

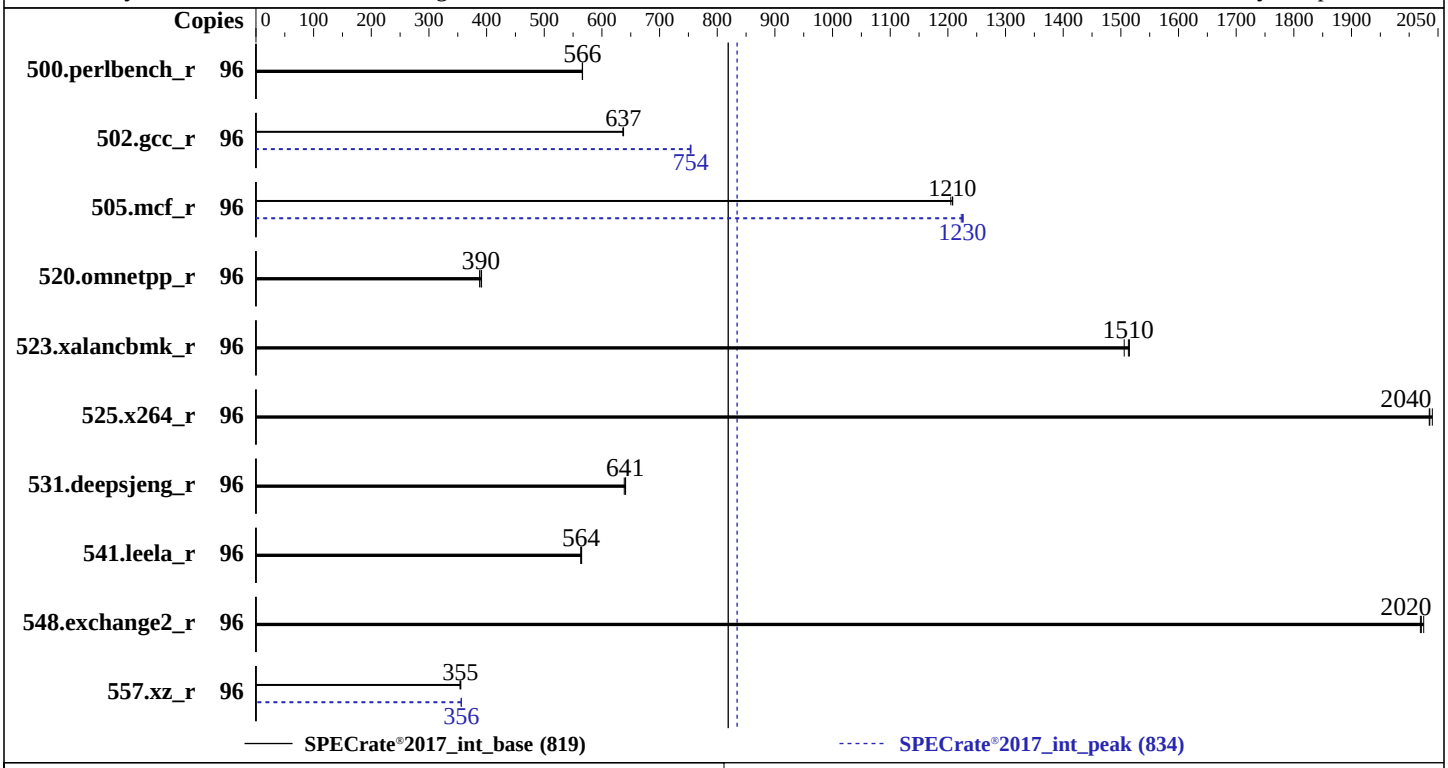
## H3C UniServer R4950 G7 (AMD EPYC 9275F)

**SPECrate®2017_int_base = 819**

**SPECrate®2017_int_peak = 834**

**CPU2017 License:** 9066
**Test Sponsor:** New H3C Technologies Co., Ltd.
**Tested by:** New H3C Technologies Co., Ltd.

**Test Date:** May-2026
**Hardware Availability:** Oct-2024
**Software Availability:** Apr-2025




## Hardware

| | |
|---|---|
| CPU Name: | AMD EPYC 9275F |
| Max MHz: | 4800 |
| Nominal: | 4100 |
| Enabled: | 48 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 / 3 cores |
| Other: | None |
| Memory: | 1536 GB (24 x 64 GB 2Rx4 PC5-6400B-R) |
| Storage: | 1 x 3.84 TB NVME SSD |
| Other: | CPU Cooling: Air |

## Software

| | |
|---|---|
| OS: | SUSE Linux Enterprise Server 15 SP7 kernel version 6.4.0-150700.51-default |
| Compiler: | C/C++/Fortran: Version 5.0.0 of AOCC |
| Parallel: | No |
| Firmware: | Version 7.30.15 released Oct-2025 |
| File System: | xfs |
| System State: | Run level 3 (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 | 96 | 270 | 566 | **270** | **566** | 270 | 566 | 96 | 270 | 566 | **270** | **566** | 270 | 566 |
| 502.gcc_r | 96 | **213** | **637** | 213 | 638 | 214 | 636 | 96 | 180 | 753 | **180** | **754** | 180 | 754 |
| 505.mcf_r | 96 | 128 | 1210 | **128** | **1210** | 129 | 1210 | 96 | 126 | 1230 | 127 | 1220 | **127** | **1230** |
| 520.omnetpp_r | 96 | **323** | **390** | 325 | 388 | 322 | 391 | 96 | **323** | **390** | 325 | 388 | 322 | 391 |
| 523.xalancbmk_r | 96 | **67.0** | **1510** | 67.3 | 1510 | 66.9 | 1510 | 96 | **67.0** | **1510** | 67.3 | 1510 | 66.9 | 1510 |
| 525.x264_r | 96 | **82.6** | **2040** | 82.6 | 2030 | 82.4 | 2040 | 96 | **82.6** | **2040** | 82.6 | 2030 | 82.4 | 2040 |
| 531.deepsjeng_r | 96 | 172 | 641 | 172 | 639 | **172** | **641** | 96 | 172 | 641 | 172 | 639 | **172** | **641** |
| 541.leela_r | 96 | 281 | 565 | **282** | **564** | 282 | 563 | 96 | 281 | 565 | **282** | **564** | 282 | 563 |
| 548.exchange2_r | 96 | 124 | 2030 | 125 | 2020 | **124** | **2020** | 96 | 124 | 2030 | 125 | 2020 | **124** | **2020** |
| 557.xz_r | 96 | 293 | 354 | 292 | 355 | **292** | **355** | 96 | 291 | 356 | 291 | 356 | **291** | **356** |

**SPECrate®2017_int_base = 819**

**SPECrate®2017_int_peak = 834**

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:/op
     t/openmpi/lib:"
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:
 SVM Mode = Disabled
 Power Profile Selection = High Performance Mode
 Determinism Slider = Power
 cTDP = 400
 PPT = 400
 NUMA nodes per socket = NPS 4
 APBDIS = 1

 Sysinfo program /home/cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Wed May 27 09:14:41 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 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
```

**(Continued on next page)**

## Platform Notes (Continued)

```
22. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -a
  Linux localhost 6.4.0-150700.51-default #1 SMP PREEMPT_DYNAMIC Wed Apr 30 21:35:43 UTC 2025 (6930611)
  x86_64 x86_64 x86_64 GNU/Linux

------------------------------------------------------------
2. w
   09:14:41 up 1 min,  1 user,  load average: 2.01, 1.47, 0.59
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                09:13   17.00s  0.74s  0.08s /bin/bash ./amd_rate_aocc500_znver5_A1.sh

------------------------------------------------------------
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) 6188550
  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) 6188550
  virtual memory          (kbytes, -v) unlimited
  file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=31
 login -- root
 -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/CPU2017.035/templogs/preenv.intrate.035.0.log --lognum 035.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9275F 24-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
```

(Continued on next page)

## Platform Notes (Continued)

```
     TLB size        : 192 4K pages
     cpu cores       : 24
     siblings        : 48
     2 physical ids (chips)
     96 processors (hardware threads)
     physical id 0: core ids 0-2,8-10,16-18,24-26,32-34,40-42,48-50,56-58
     physical id 1: core ids 0-2,8-10,16-18,24-26,32-34,40-42,48-50,56-58
     physical id 0: apicids 0-5,16-21,32-37,48-53,64-69,80-85,96-101,112-117
     physical id 1: apicids 128-133,144-149,160-165,176-181,192-197,208-213,224-229,240-245
   Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
   virtualized systems.  Use the above data carefully.

------------------------------------------------------------
7. lscpu

From lscpu from util-linux 2.40.4:
   Architecture:                         x86_64
   CPU op-mode(s):                       32-bit, 64-bit
   Address sizes:                        52 bits physical, 57 bits virtual
   Byte Order:                           Little Endian
   CPU(s):                               96
   On-line CPU(s) list:                  0-95
   Vendor ID:                            AuthenticAMD
   Model name:                           AMD EPYC 9275F 24-Core Processor
   CPU family:                           26
   Model:                                2
   Thread(s) per core:                   2
   Core(s) per socket:                   24
   Socket(s):                            2
   Stepping:                             1
   Frequency boost:                      enabled
   CPU(s) scaling MHz:                   98%
   CPU max MHz:                          4100.0000
   CPU min MHz:                          1500.0000
   BogoMIPS:                             8180.84
   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 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
   L1d cache:                            2.3 MiB (48 instances)
   L1i cache:                            1.5 MiB (48 instances)
   L2 cache:                             48 MiB (48 instances)
   L3 cache:                             512 MiB (16 instances)
```

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## Platform Notes (Continued)

```
  NUMA node(s):                         8
  NUMA node0 CPU(s):                    0-5,48-53
  NUMA node1 CPU(s):                    6-11,54-59
  NUMA node2 CPU(s):                    12-17,60-65
  NUMA node3 CPU(s):                    18-23,66-71
  NUMA node4 CPU(s):                    24-29,72-77
  NUMA node5 CPU(s):                    30-35,78-83
  NUMA node6 CPU(s):                    36-41,84-89
  NUMA node7 CPU(s):                    42-47,90-95
  Vulnerability Gather data sampling:   Not affected
  Vulnerability Itlb multihit:          Not affected
  Vulnerability L1tf:                   Not affected
  Vulnerability Mds:                    Not affected
  Vulnerability Meltdown:               Not affected
  Vulnerability Mmio stale data:        Not affected
  Vulnerability Reg file data sampling: Not affected
  Vulnerability Retbleed:               Not affected
  Vulnerability Spec rstack overflow:   Mitigation; IBPB on VMEXIT only
  Vulnerability Spec store bypass:      Mitigation; Speculative Store Bypass disabled via prctl
  Vulnerability Spectre v1:             Mitigation; usercopy/swapgs barriers and __user pointer sanitization
  Vulnerability Spectre v2:             Mitigation; Enhanced / Automatic IBRS; IBPB conditional; STIBP
                                        always-on; RSB filling; PBRSB-eIBRS Not affected; BHI Not affected
  Vulnerability Srbds:                  Not affected
  Vulnerability Tsx async abort:        Not affected

From lscpu --cache:
     NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
     L1d       48K     2.3M   12 Data            1    64        1             64
     L1i       32K     1.5M    8 Instruction     1    64        1             64
     L2         1M      48M   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: 0-5,48-53
  node 0 size: 192933 MB
  node 0 free: 192652 MB
  node 1 cpus: 6-11,54-59
  node 1 size: 193532 MB
  node 1 free: 193201 MB
  node 2 cpus: 12-17,60-65
  node 2 size: 193532 MB
  node 2 free: 193315 MB
  node 3 cpus: 18-23,66-71
  node 3 size: 193532 MB
  node 3 free: 193319 MB
  node 4 cpus: 24-29,72-77
  node 4 size: 193532 MB
  node 4 free: 193297 MB
  node 5 cpus: 30-35,78-83
  node 5 size: 193494 MB
  node 5 free: 193248 MB
  node 6 cpus: 36-41,84-89
  node 6 size: 193532 MB
  node 6 free: 193253 MB
  node 7 cpus: 42-47,90-95
  node 7 size: 193072 MB
  node 7 free: 191670 MB
```

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## Platform Notes (Continued)

```
  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:       1584295440 kB

------------------------------------------------------------
10. who -r
  run-level 3 May 27 09:13

------------------------------------------------------------
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          apparmor auditd chronyd cron getty@ irqbalance issue-generator kbdsettings kdump
                   kdump-early kdump-notify nvmefc-boot-connections nvmf-autoconnect postfix purge-kernels
                   rollback sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6
                   wickedd-nanny
  enabled-runtime  systemd-remount-fs
  disabled         boot-sysctl ca-certificates chrony-wait console-getty cups cups-browsed debug-shell
                   ebtables firewalld fsidd grub2-once haveged hwloc-dump-hwdata issue-add-ssh-keys
                   kexec-load lunmask munge nfs nfs-blkmap rpcbind rpmconfigcheck serial-getty@
                   systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysext
                   systemd-time-wait-sync systemd-timesyncd
  indirect         pcscd systemd-userdbd wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.51-default
  root=UUID=4953839d-11e1-46da-9a81-d08855946185
  splash=silent
  resume=/dev/disk/by-uuid/dda201e9-fc6d-4e40-8516-a7f4746f0e49
  mitigations=auto
  quiet
  security=apparmor
  crashkernel=379M,high
  crashkernel=72M,low

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 53:
    current policy: frequency should be within 1.50 GHz and 4.10 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes
```

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## Platform Notes (Continued)

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

------------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu2017
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/nvme0n1p4 xfs   482G   42G  441G   9% /home

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         New H3C Technologies Co., Ltd.
    Product:        H3C UniServer R4950 G7
    Product Family: Rack
    Serial:         210235A55CH251000004

------------------------------------------------------------
21. dmidecode
```

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## Platform Notes (Continued)

```
  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:
    13x SK Hynix HMCG94AHBRA480N 64 GB 2 rank 6400
    1x SK Hynix HMCG94AHBRA481N 64 GB 2 rank 6400
    1x SK Hynix HMCG94AHBRA485N 64 GB 2 rank 6400
    9x SK Hynix HMCG94AHBRA487N 64 GB 2 rank 6400


 ------------------------------------------------------------
 22. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       American Megatrends International, LLC.
    BIOS Version:      7.30.15
    BIOS Date:         10/31/2025
    BIOS Revision:     5.35
    Firmware Revision: 2.13
```

## 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
--------------------------------------------------------------------------------------------------------------

==============================================================================================================
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
--------------------------------------------------------------------------------------------------------------
```


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## Compiler Version Notes (Continued)

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

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

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## Peak Optimization Flags (Continued)

505.mcf_r (continued):
-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: basepeak = yes

523.xalancbmk_r: basepeak = yes

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

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## Peak Other Flags (Continued)

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.2025-11-05.html
http://www.spec.org/cpu2017/flags/New_H3C-Platform-AMD-Settings-V2.0-Turin.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc500-flags.2025-11-05.xml
http://www.spec.org/cpu2017/flags/New_H3C-Platform-AMD-Settings-V2.0-Turin.xml


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Tested with SPEC CPU®2017 v1.1.9 on 2026-05-26 21:14:41-0400.
Report generated on 2026-06-16 17:50:15 by CPU2017 PS formatter v6716.
Originally published on 2026-06-16.