



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376

SPECspeed®2017\_fp\_peak = 379

CPU2017 License: 9066

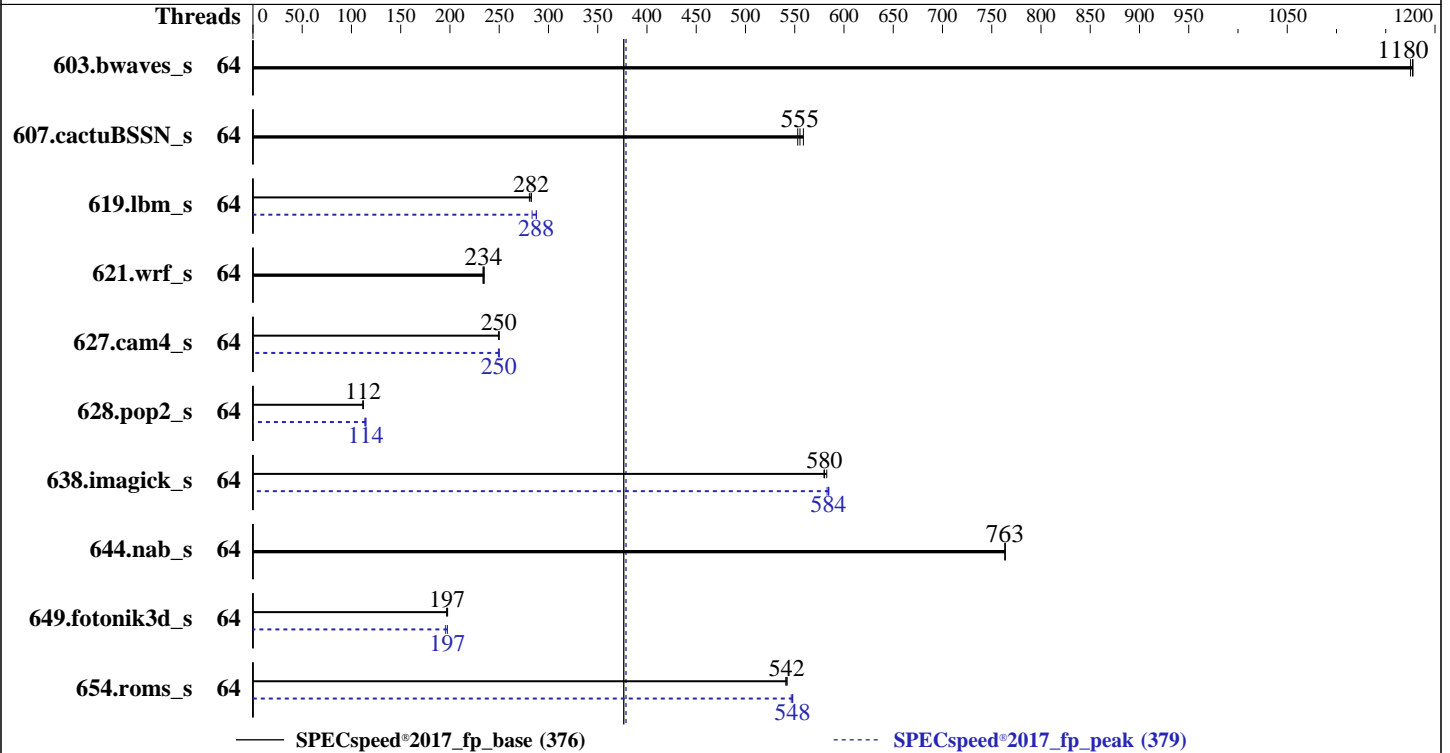
Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Oct-2024

Software Availability: Oct-2024



## Hardware

CPU Name: AMD EPYC 9535  
 Max MHz: 4300  
 Nominal: 2400  
 Enabled: 64 cores, 1 chip  
 Orderable: 1 chip  
 Cache L1: 32 KB I + 48 KB D on chip per core  
 L2: 1 MB I+D on chip per core  
 L3: 256 MB I+D on chip per chip, 16 MB shared / 4 cores  
 Other: None  
 Memory: 384 GB (12 x 32 GB 2Rx8 PC5-6400B-R, running at 6000)  
 Storage: 1 x 960GB SSD  
 Other: CPU Cooling: Air

## Software

OS: Ubuntu 24.04.1 LTS  
 kernel version 6.8.0-45-generic  
 C/C++/Fortran: Version 5.0.0 of AOCC  
 Compiler: Yes  
 Parallel: Yes  
 Firmware: Version 7.30.04 released Dec-2024  
 File System: ext4  
 System State: Run level 5 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 Other: None  
 Power Management: BIOS set to prefer performance at the cost of additional power usage.



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECSpeed®2017\_fp\_base = 376  
SPECSpeed®2017\_fp\_peak = 379

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

Test Date: Dec-2024  
Hardware Availability: Oct-2024  
Software Availability: Oct-2024

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	64	50.1	1180	50.2	1180	<u>50.1</u>	<u>1180</u>	64	50.1	1180	50.2	1180	<u>50.1</u>	<u>1180</u>
607.cactuBSSN_s	64	29.8	559	30.1	553	<u>30.0</u>	<u>555</u>	64	29.8	559	30.1	553	<u>30.0</u>	<u>555</u>
619.lbm_s	64	18.5	283	18.7	281	<u>18.5</u>	<u>282</u>	64	18.2	288	<u>18.2</u>	<u>288</u>	18.5	283
621.wrf_s	64	56.6	234	56.3	235	<u>56.5</u>	<u>234</u>	64	56.6	234	56.3	235	<u>56.5</u>	<u>234</u>
627.cam4_s	64	<u>35.5</u>	<u>250</u>	35.5	250	35.5	250	64	35.4	250	<u>35.5</u>	<u>250</u>	35.6	249
628.pop2_s	64	106	112	106	112	<u>106</u>	<u>112</u>	64	104	115	105	114	<u>104</u>	<u>114</u>
638.imagick_s	64	24.8	583	24.9	580	<u>24.9</u>	<u>580</u>	64	<u>24.7</u>	<u>584</u>	24.7	585	24.8	583
644.nab_s	64	<u>22.9</u>	<u>763</u>	22.9	763	22.9	764	64	<u>22.9</u>	<u>763</u>	22.9	763	22.9	764
649.fotonik3d_s	64	46.1	198	46.4	197	<u>46.3</u>	<u>197</u>	64	46.7	195	<u>46.2</u>	<u>197</u>	46.2	197
654.roms_s	64	29.0	542	29.1	541	<u>29.1</u>	<u>542</u>	64	28.8	546	<u>28.7</u>	<u>548</u>	28.7	548

SPECSpeed®2017\_fp\_base = 376

SPECSpeed®2017\_fp\_peak = 379

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.



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376  
SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

```
GOMP_CPU_AFFINITY = "0-63"
LD_LIBRARY_PATH =
"/home/cpu2017/amd_speed_aocc500_znver5_A_lib/lib:/home/cpu2017/amd_speed_aocc500_znver5_A_lib/lib32:/usr/local/amd/aocc-compiler-5.0.0/lib:/usr/local/amd/aocc-compiler-5.0.0/lib32"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "64"
```

Environment variables set by runcpu during the 619.lbm\_s peak run:

```
GOMP_CPU_AFFINITY = "0-63"
```

Environment variables set by runcpu during the 627.cam4\_s peak run:

```
GOMP_CPU_AFFINITY = "0-63"
```

Environment variables set by runcpu during the 628.pop2\_s peak run:

```
GOMP_CPU_AFFINITY = "0-63"
```

Environment variables set by runcpu during the 638.imagick\_s peak run:

```
GOMP_CPU_AFFINITY = "0-63"
```

Environment variables set by runcpu during the 649.fotonik3d\_s peak run:

```
GOMP_CPU_AFFINITY = "0-63"
```

Environment variables set by runcpu during the 654.roms\_s peak run:

```
GOMP_CPU_AFFINITY = "0-63"
```

## General Notes

Binaries were compiled on a system with 2x AMD EPYC 9D64 CPU + 500GiB Memory using Ubuntu 22.04

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:

SMT Control set to Disabled  
SVM Mode set to Disabled  
Power Profile Selection set to High Performance Mode  
Determinism Slider set to Power  
cTDP set to 300  
PPT set to 300  
NUMA nodes per socket set to NPS 2

Sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on h3c Sat Dec 28 22:21:23 2024

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

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376  
SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Platform Notes (Continued)

### 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-lubuntu8.4)
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 -a
Linux h3c 6.8.0-45-generic #45-Ubuntu SMP PREEMPT_DYNAMIC Fri Aug 30 12:02:04 UTC 2024 x86_64 x86_64 x86_64
GNU/Linux
```

```
2. w
22:21:23 up 7:58, 3 users, load average: 1.28, 0.95, 0.38
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
root      tty1     -               14:26    3.00s  0.87s  0.07s /bin/bash ./amd_speed_aocc500_znver5_A1.sh
root      -        172.17.53.33    14:30    13:03m 0.00s  14.58s sshd: root@pts/0
root      -        172.17.53.33    14:30    13:03m 0.00s  0.04s sshd: root@notty
```

```
3. Username
From environment variable $USER: root
```

```
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            1545628
nofiles            1024
vmemory(kbytes)    unlimited
locks              unlimited
rtprio            0
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376  
SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Platform Notes (Continued)

```

-----
5. sysinfo process ancestry
/bin/init
/bin/login -p --
-bash
python3 ./run_amd_speed_aocc500_znver5_A1.py
/bin/bash ./amd_speed_aocc500_znver5_A1.sh
runcpu --config amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 fpspeed
runcpu --configfile amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode speed --tune base:peak --size test:train:refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.011/templogs/preenv.fpspeed.011.0.log --lognum 011.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
-----

6. /proc/cpuinfo
model name      : AMD EPYC 9535 64-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 26
model          : 2
stepping      : 1
microcode     : 0xb00211a
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 192 4K pages
cpu cores     : 64
siblings      : 64
1 physical ids (chips)
64 processors (hardware threads)
physical id 0: core ids
0-3,16-19,32-35,48-51,64-67,80-83,96-99,112-115,128-131,144-147,160-163,176-179,192-195,208-211,224-227,2
40-243
physical id 0: apicids
0-3,16-19,32-35,48-51,64-67,80-83,96-99,112-115,128-131,144-147,160-163,176-179,192-195,208-211,224-227,2
40-243
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):                64
On-line CPU(s) list:  0-63
Vendor ID:             AuthenticAMD
BIOS Vendor ID:       Advanced Micro Devices, Inc.
Model name:            AMD EPYC 9535 64-Core Processor
BIOS Model name:      AMD EPYC 9535 64-Core Processor
BIOS CPU family:      107
CPU family:            26
Model:                 2
Thread(s) per core:   1
Core(s) per socket:   64
Socket(s):             1
Stepping:              1
Frequency boost:      enabled
CPU(s) scaling MHz:   49%

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376

SPECspeed®2017\_fp\_peak = 379

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Oct-2024

Software Availability: Oct-2024

## Platform Notes (Continued)

```

CPU max MHz:          4307.8120
CPU min MHz:          1500.0000
BogoMIPS:              4793.26
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 fl6c 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 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_lld debug_swap
Lld cache:             3 MiB (64 instances)
L1i cache:             2 MiB (64 instances)
L2 cache:              64 MiB (64 instances)
L3 cache:              256 MiB (16 instances)
NUMA node(s):         2
NUMA node0 CPU(s):    0-31
NUMA node1 CPU(s):    32-63
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:       Not affected
Vulnerability Lltf:                 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
                                   disabled; RSB filling; PBR SB-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	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	16M	256M	16	Unified	3	16384	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```

available: 2 nodes (0-1)
node 0 cpus: 0-31
node 0 size: 193065 MB
node 0 free: 192117 MB

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376

SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Platform Notes (Continued)

```
node 1 cpus: 32-63
node 1 size: 193419 MB
node 1 free: 192561 MB
node distances:
node 0 1
0: 10 12
1: 12 10
```

```
-----
9. /proc/meminfo
MemTotal: 395759776 kB
-----
```

```
10. who -r
run-level 5 Dec 28 14:22
-----
```

```
11. Systemd service manager version: systemd 255 (255.4-lubuntu8.4)
Default Target Status
graphical running
-----
```

```
12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled apparmor apport blk-availability cloud-config cloud-final cloud-init cloud-init-local
console-setup e2scrub_reap finalrd getty@ gpu-manager grub-common grub-initrd-fallback
keyboard-setup lm-sensors lvm2-monitor multipathd networkd-dispatcher open-iscsi pollinate
secureboot-db setvtrgb systemd-networkd systemd-networkd-wait-online systemd-pstore
systemd-resolved systemd-timesyncd thermald
enabled-runtime netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled console-getty debug-shell iscsid 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-sysex
systemd-time-wait-sync upower
indirect systemd-sysupdate systemd-sysupdate-reboot
masked cryptdisks cryptdisks-early hwclock multipath-tools-boot sudo x11-common
-----
```

```
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=vmlinux-6.8.0-45-generic
root=/dev/mapper/ubuntu--vg-ubuntu--lv
ro
iommu=pt
-----
```

```
14. cpupower frequency-info
analyzing CPU 55:
current policy: frequency should be within 1.50 GHz and 2.40 GHz.
The governor "schedutil" may decide which speed to use
within this range.

boost state support:
Supported: yes
Active: yes
Boost States: 0
Total States: 3
Pstate-P0: 44800MHz
-----
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376  
SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## 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 Ubuntu 24.04.1 LTS

```

### 19. Disk information

SPEC is set to: /home/cpu2017

```

Filesystem                                Type  Size  Used Avail Use% Mounted on
/dev/mapper/ubuntu--vg-ubuntu--lv ext4   98G   21G   73G  23% /

```

### 20. /sys/devices/virtual/dmi/id

```

Vendor:      H3C
Product:     R3950 G6
Product Family: Rack
Serial:      202311A3SFH20C000109

```

### 21. 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

(Continued on next page)





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376  
SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Platform Notes (Continued)

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

### Memory:

- 4x Samsung M321R4GA3EB2-CCPEC 32 GB 2 rank 6400, configured at 6000
- 3x Samsung M321R4GA3EB2-CCPKC 32 GB 2 rank 6400, configured at 6000
- 1x Samsung M321R4GA3EB2-CCPPC 32 GB 2 rank 6400, configured at 6000
- 4x Samsung M321R4GA3EB2-CCPWC 32 GB 2 rank 6400, configured at 6000

### 22. BIOS

(This section combines info from /sys/devices and dmidecode.)

```

BIOS Vendor:      American Megatrends International, LLC.
BIOS Version:     7.30.04
BIOS Date:        12/10/2024
BIOS Revision:    5.35
Firmware Revision: 1.12

```

## Compiler Version Notes

```

=====
C | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(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++, C, Fortran | 607.cactuBSSN_s(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
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
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 | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(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, C | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)
=====

```

```

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
=====

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376

SPECspeed®2017\_fp\_peak = 379

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Oct-2024

Software Availability: Oct-2024

## Compiler Version Notes (Continued)

```

Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
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

Fortran benchmarks:

flang

Benchmarks using both Fortran and C:

flang clang

Benchmarks using Fortran, C, and C++:

clang++ clang flang

## Base Portability Flags

```

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
627.cam4_s: -DSPEC_CASE_FLAG -DSPEC_LP64
628.pop2_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

```

## Base Optimization Flags

C benchmarks:

```

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP -flto
-fremap-arrays -fstrip-mining -fstruct-layout=7

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376

SPECspeed®2017\_fp\_peak = 379

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Oct-2024

Software Availability: Oct-2024

## Base Optimization Flags (Continued)

C benchmarks (continued):

```
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -mrecip=none -fopenmp=libomp -lomp
-lamdlibm -lamdalloc -lflang
```

Fortran benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -DSPEC_OPENMP -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -funroll-loops
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3
-Mrecursive -zopt -fopenmp=libomp -lomp -lamdlibm -lamdalloc
-lflang
```

Benchmarks using both Fortran and C:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP -flto
-freemap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -funroll-loops
-mllvm -lsr-in-nested-loop -Mrecursive -mrecip=none -fopenmp=libomp
-lomp -lamdlibm -lamdalloc -lflang
```

Benchmarks using Fortran, C, and C++:

```
-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP -flto
-freemap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt
-mllvm -loop-unswitch-threshold=200000 -mllvm -unroll-threshold=100
-funroll-loops -mllvm -lsr-in-nested-loop -Mrecursive -mrecip=none
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

## Base Other Flags

C benchmarks:

```
-Wno-return-type -Wno-unused-command-line-argument
```

Fortran benchmarks:

```
-Wno-unused-command-line-argument
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376  
SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Base Other Flags (Continued)

Benchmarks using both Fortran and C:  
-Wno-return-type -Wno-unused-command-line-argument

Benchmarks using Fortran, C, and C++:  
-Wno-return-type -Wno-unused-command-line-argument

## Peak Compiler Invocation

C benchmarks:  
clang

Fortran benchmarks:  
flang

Benchmarks using both Fortran and C:  
flang clang

Benchmarks using Fortran, C, and C++:  
clang++ clang flang

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

```
619.lbm_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -DSPEC_OPENMP -fremap-arrays -fstrip-mining
-fstruct-layout=9 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -fopenmp=libomp -lomp
-lamdlibm -lamdalloc -lflang
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017\_fp\_base = 376

H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_peak = 379

CPU2017 License: 9066

Test Date: Dec-2024

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: Oct-2024

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Oct-2024

## Peak Optimization Flags (Continued)

638.imagick\_s: Same as 619.lbm\_s

644.nab\_s: basepeak = yes

Fortran benchmarks:

603.bwaves\_s: basepeak = yes

649.fotonik3d\_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -DSPEC\_OPENMP  
-Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math  
-fopenmp -flto -mllvm -reduce-array-computations=3  
-Mrecursive -zopt -fopenmp=libomp -lomp -lamdlibm  
-lamdalloc -lflang

654.roms\_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -DSPEC\_OPENMP  
-Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math  
-fopenmp -fscalar-transform -fvector-transform  
-mllvm -reduce-array-computations=3 -Mrecursive  
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang

Benchmarks using both Fortran and C:

621.wrf\_s: basepeak = yes

627.cam4\_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -Ofast  
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp  
-flto -DSPEC\_OPENMP -fremap-arrays -fstrip-mining  
-fstruct-layout=9 -mllvm -inline-threshold=1000  
-mllvm -reduce-array-computations=3  
-mllvm -unroll-threshold=50 -zopt -Mrecursive  
-mrecip=none -fopenmp=libomp -lomp -lamdlibm -lamdalloc  
-lflang

628.pop2\_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -Ofast  
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp  
-flto -DSPEC\_OPENMP -fremap-arrays -fstrip-mining  
-fstruct-layout=9 -mllvm -inline-threshold=1000  
-mllvm -reduce-array-computations=3

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.  
H3C UniServer R3950 G7 (AMD EPYC 9535)  
AMD EPYC 9535

SPECspeed®2017\_fp\_base = 376  
SPECspeed®2017\_fp\_peak = 379

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

**Test Date:** Dec-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Peak Optimization Flags (Continued)

628.pop2\_s (continued):  
-mllvm -unroll-threshold=50 -zopt -fscalar-transform  
-fvector-transform -Mrecursive -fopenmp=libomp -lomp  
-lamdlibm -lamdalloc -lflang

Benchmarks using Fortran, C, and C++:

607.cactuBSSN\_s: basepeak = yes

## Peak Other Flags

C benchmarks:  
-Wno-return-type -Wno-unused-command-line-argument

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

Benchmarks using both Fortran and C:  
-Wno-return-type -Wno-unused-command-line-argument

Benchmarks using Fortran, C, and C++:  
-Wno-return-type -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/New\\_H3C-Platform-AMD-Settings-V1.5-Turin.html](http://www.spec.org/cpu2017/flags/New_H3C-Platform-AMD-Settings-V1.5-Turin.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/New\\_H3C-Platform-AMD-Settings-V1.5-Turin.xml](http://www.spec.org/cpu2017/flags/New_H3C-Platform-AMD-Settings-V1.5-Turin.xml)

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2024-12-28 17:21:23-0500.  
Report generated on 2025-01-28 22:03:17 by CPU2017 PDF formatter v6716.  
Originally published on 2025-01-28.