



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

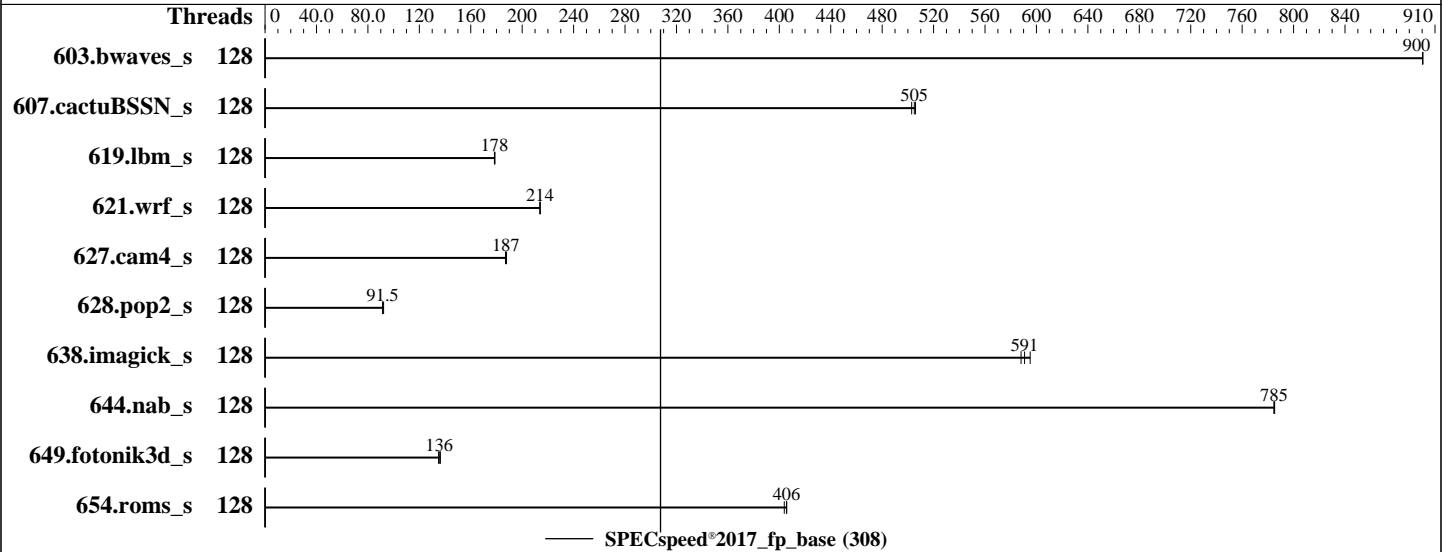
Test Date: Jun-2024

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: May-2024

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Nov-2023



Hardware

CPU Name: AMD EPYC 9754
 Max MHz: 3100
 Nominal: 2250
 Enabled: 128 cores, 1 chip
 Orderable: 1 chip
 Cache L1: 32 KB I + 32 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 / 8 cores
 Other: None
 Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 1 x 960GB SSD
 Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux release 9.3 (Plow) kernel version 5.14.0-362.8.1.el9_3.x86_64
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
 Parallel: Yes
 Firmware: Version 6.30.31 released May-2024
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 Other: None
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	128	65.5	900	65.5	900	65.5	901							
607.cactuBSSN_s	128	33.1	503	32.9	506	33.0	505							
619.lbm_s	128	29.3	178	29.4	178	29.3	179							
621.wrf_s	128	61.9	214	61.8	214	61.8	214							
627.cam4_s	128	47.2	188	47.4	187	47.3	187							
628.pop2_s	128	130	91.5	129	92.2	130	91.4							
638.imagick_s	128	24.5	588	24.2	595	24.4	591							
644.nab_s	128	22.3	785	22.2	785	22.3	785							
649.fotonik3d_s	128	66.8	136	67.5	135	67.3	136							
654.roms_s	128	38.8	406	38.8	406	39.0	404							

SPECspeed®2017_fp_base = 308

SPECspeed®2017_fp_peak = Not Run

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

The AMD64 AOCC Compiler Suite is available at <http://developer.amd.com/amd-aocc/>

Submit Notes

The config file option 'submit' was used.
'numactl' was used to bind copies to the cores.
See the configuration file for details.

Operating System Notes

'ulimit -s unlimited' was used to set environment stack size limit
'ulimit -l 2097152' was used to set environment locked pages in memory limit

runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>

To limit dirty cache to 8% of memory, 'sysctl -w vm.dirty_ratio=8' run as root.
To limit swap usage to minimum necessary, 'sysctl -w vm.swappiness=1' run as root.
To free node-local memory and avoid remote memory usage,
'sysctl -w vm.zone_reclaim_mode=1' run as root.
To clear filesystem caches, 'sync; sysctl -w vm.drop_caches=3' run as root.
To disable address space layout randomization (ASLR) to reduce run-to-run variability, 'sysctl -w kernel.randomize_va_space=0' run as root.

To reduce scheduler overhead, Linux was booted with cmdline option:
cgroup_disable=memory,cpu,cpuacct,blkio,hugetlb,pids,cpuset,perf_event,freezer,devices,net_cls,net_prio
To enable Transparent Hugepages (THP) only on request for base runs,
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root.
To enable THP for all allocations for peak runs,
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Operating System Notes (Continued)

'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.

Environment Variables Notes

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

GOMP_CPU_AFFINITY = "0-127"

LD_LIBRARY_PATH =

"/home/cpull19/amd_speed_aocc400_znver4_A_lib/lib:/usr/local/amd/aocc-compiler-4.2.0/lib:/usr/local/amd/aocc-compiler-4.2.0/lib32"

LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"

MALLOC_CONF = "oversize_threshold:0,retain:true"

OMP_DYNAMIC = "false"

OMP_SCHEDULE = "static"

OMP_STACKSIZE = "128M"

OMP_THREAD_LIMIT = "128"

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:

cTDP Control: Manual

cTDP: 400

PPT Control: Manual

PPT: 400

Determinism Slider set to Power

NUMA nodes per socket: NPS1

IOMMU: Auto

SVM Mode: Disabled

SMT: Disabled

Sysinfo program /home/cpull19/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost.localdomain Thu Jun 13 10:36:27 2024

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

Table of contents

1. uname -a
2. w
3. Username
4. ulimit -a

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Platform Notes (Continued)

- 5. sysinfo process ancestry
- 6. /proc/cpuinfo
- 7. lscpu
- 8. numactl --hardware
- 9. /proc/meminfo
- 10. who -r
- 11. Systemd service manager version: systemd 252 (252-18.e19)
- 12. Failed units, from systemctl list-units --state=failed
- 13. Services, from systemctl list-unit-files
- 14. Linux kernel boot-time arguments, from /proc/cmdline
- 15. cpupower frequency-info
- 16. tuned-adm active
- 17. sysctl
- 18. /sys/kernel/mm/transparent_hugepage
- 19. /sys/kernel/mm/transparent_hugepage/khugepaged
- 20. OS release
- 21. Disk information
- 22. /sys/devices/virtual/dmi/id
- 23. dmidecode
- 24. BIOS

```
-----
1. uname -a
Linux localhost.localdomain 5.14.0-362.8.1.el9_3.x86_64 #1 SMP PREEMPT_DYNAMIC Tue Oct 3 11:12:36 EDT 2023
x86_64 x86_64 x86_64 GNU/Linux
-----
```

```
-----
2. w
10:36:27 up 49 min, 2 users, load average: 3.34, 57.68, 82.72
USER      TTY      LOGIN@   IDLE   JCPU   PCPU WHAT
root      tty1     21Aug23 296days 0.00s  0.00s -bash
root      pts/0    21Aug23 11.00s  1.23s  0.11s /bin/bash ./amd_speed_aocc400_znver4_A1.sh
-----
```

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

```
-----
4. ulimit -a
real-time non-blocking time (microseconds, -R) unlimited
core file size              (blocks, -c) unlimited
data seg size                (kbytes, -d) unlimited
scheduling priority         (-e) 0
file size                    (blocks, -f) unlimited
pending signals              (-i) 3090765
max locked memory            (kbytes, -l) 2097152
max memory size              (kbytes, -m) unlimited
open files                   (-n) 1024000
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) 3090765
virtual memory                (kbytes, -v) unlimited
file locks                    (-x) unlimited
-----
```

```
-----
5. sysinfo process ancestry
-----
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Date: Jun-2024

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: May-2024

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Nov-2023

Platform Notes (Continued)

```

/usr/lib/systemd/systemd --switched-root --system --deserialize 31
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@pts/0
-bash
python3 ./run_amd_speed_aocc400_znver4_A1.py
/bin/bash ./amd_speed_aocc400_znver4_A1.sh
runcpu --config amd_speed_aocc400_znver4_A1.cfg --tune base --reportable --iterations 3 fpspeed
runcpu --configfile amd_speed_aocc400_znver4_A1.cfg --tune base --reportable --iterations 3 --nopower
--runmode speed --tune base --size test:train:refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.025/templogs/preenv.fpspeed.025.0.log --lognum 025.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpul19

```

```

6. /proc/cpuinfo
model name      : AMD EPYC 9754 128-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 25
model          : 160
stepping       : 2
microcode      : 0xaa00215
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 3584 4K pages
cpu cores     : 128
siblings      : 128
1 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids
0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
240-247
physical id 0: apicids
0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
240-247

```

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 2.37.4:
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):            128
On-line CPU(s) list: 0-127
Vendor ID:         AuthenticAMD
BIOS Vendor ID:    Advanced Micro Devices, Inc.
Model name:        AMD EPYC 9754 128-Core Processor
BIOS Model name:   AMD EPYC 9754 128-Core Processor
CPU family:        25
Model:             160
Thread(s) per core: 1
Core(s) per socket: 128
Socket(s):         1
Stepping:          2
Frequency boost:   enabled
CPU max MHz:       3100.3411
CPU min MHz:       1500.0000

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Date: Jun-2024

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: May-2024

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Nov-2023

Platform Notes (Continued)

```

BogoMIPS: 4493.14
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
aperfperf 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 bpeext perfctr_llc mwaitx cpb
cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba perfmon_v2 ibrs ibpb
stibp ibrs_enhanced vmmcall fsgsbase 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 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 vnm1
avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni
avx512_bitalg avx512_vpopcntdq la57 rdpid overflow_recov succor smca
fsrm flush_l1d

Virtualization: AMD-V
L1d cache: 4 MiB (128 instances)
L1i cache: 4 MiB (128 instances)
L2 cache: 128 MiB (128 instances)
L3 cache: 256 MiB (16 instances)
NUMA node(s): 1
NUMA node0 CPU(s): 0-127
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 Retbleed: 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, PBRSE-eIBRS 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	32K	4M	8	Data	1	64	1	64
L1i	32K	4M	8	Instruction	1	64	1	64
L2	1M	128M	8	Unified	2	2048	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: 1 nodes (0)
node 0 cpus: 0-127
node 0 size: 772752 MB
node 0 free: 767787 MB
node distances:
node 0
0: 10

```

9. /proc/meminfo

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Platform Notes (Continued)

MemTotal: 791298604 kB

10. who -r
run-level 3 Aug 21 20:00

11. Systemd service manager version: systemd 252 (252-18.el9)
Default Target Status
multi-user degraded

12. Failed units, from systemctl list-units --state=failed
UNIT LOAD ACTIVE SUB DESCRIPTION
* mdmonitor.service loaded failed failed Software RAID monitoring and management

13. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker gdm
getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump ksm ksmtuned
libstoragemgmt lm_sensors low-memory-monitor lvm2-monitor mcelog mdmonitor microcode
multipathd nis-domainname nvme-fc-boot-connections ostree-remount power-profiles-daemon
qemu-guest-agent rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd
switcheroo-control systemd-boot-update systemd-network-generator tuned udisks2 upower
vgauthd vmttoolsd
enabled-runtime systemd-remount-fs
disabled arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown
canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed
dbus-daemon debug-shell dnf-system-upgrade dnsmasq fancontrol firewallld hwloc-dump-hwdata
iprdump iprinit iprupdate iscsid iscsiui kpatch kvm_stat ledmon
man-db-restart-cache-update netavark-dhcp-proxy nftables nvme-fc-autoconnect
ostree-readonly-sysroot-migration podman podman-auto-update podman-clean-transient
podman-kube@ podman-restart powertop psacct ras-mc-ctl rasdaemon rdisc rhcd rhsm
rhsm-facts rpmdb-rebuild selinux-check-proper-disable serial-getty@ speech-dispatcherd
sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysexec wpa_supplicant
indirect spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
systemd-sysupdate systemd-sysupdate-reboot

14. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-362.8.1.el9_3.x86_64
root=/dev/mapper/rhel-root
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
default_hugepagesz=1G
cgroupl_disable=memory,cpu,cpuacct,blkio,hugetlb,pids,cpuset,perf_event,freezer,devices,net_cls,net_prio

15. cpupower frequency-info
analyzing CPU 0:
current policy: frequency should be within 1.50 GHz and 2.25 GHz.
The governor "performance" may decide which speed to use
within this range.
boost state support:
Supported: yes

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Date: Jun-2024

Test Sponsor: New H3C Technologies Co., Ltd.

Hardware Availability: May-2024

Tested by: New H3C Technologies Co., Ltd.

Software Availability: Nov-2023

Platform Notes (Continued)

Active: yes
Boost States: 0
Total States: 3
Pstate-P0: 2250MHz

16. tuned-adm active
Current active profile: throughput-performance

17. sysctl
kernel.numa_balancing 0
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

18. /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

19. /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

20. OS release
From /etc/*-release /etc/*-version
os-release Red Hat Enterprise Linux 9.3 (Plow)
redhat-release Red Hat Enterprise Linux release 9.3 (Plow)
system-release Red Hat Enterprise Linux release 9.3 (Plow)

21. Disk information
SPEC is set to: /home/cpu119
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 819G 11G 808G 2% /home

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Platform Notes (Continued)

```
-----
22. /sys/devices/virtual/dmi/id
Vendor:      N/A
Product:    N/A
Product Family: Rack
Serial:     N/A
-----
```

```
-----
23. 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:
  12x Micron Technology MTC40F2046S1RC48BA1 64 GB 2 rank 4800
-----
```

```
-----
24. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:   American Megatrends International, LLC.
BIOS Version:  6.30.31
BIOS Date:    05/30/2024
BIOS Revision: 5.27
-----
```

Compiler Version Notes

```
=====
C | 619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)
-----
```

```
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin
-----
```

```
=====
C++, C, Fortran | 607.cactuBSSN_s(base)
-----
```

```
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin
-----
```

```
=====
Fortran | 603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)
-----
```

```
AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
-----
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Compiler Version Notes (Continued)

Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

Fortran, C | 621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(base)

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu

Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/bin

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#434 2022_10_28) (based on LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu

Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-4.0.0/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



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Base Optimization Flags

C benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -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=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -Mrecursive
-funroll-loops -mllvm -lsr-in-nested-loop
-mllvm -reduce-array-computations=3 -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=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -fopenmp=libomp -lomp -lamdlibm -lamdalloc
-lflang
```

Benchmarks using Fortran, C, and C++:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000 -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -fopenmp=libomp -lomp -lamdlibm -lamdalloc
-lflang
```



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECspeed®2017_fp_base = 308

H3C UniServer R3950 G6 (AMD EPYC 9754)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9066

Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Jun-2024

Hardware Availability: May-2024

Software Availability: Nov-2023

Base 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/New_H3C-Platform-AMD-Settings-V1.1-Genoa.html

<http://www.spec.org/cpu2017/flags/aocc400-flags.html>

You can also download the XML flags sources by saving the following links:

http://www.spec.org/cpu2017/flags/New_H3C-Platform-AMD-Settings-V1.1-Genoa.xml

<http://www.spec.org/cpu2017/flags/aocc400-flags.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.

Tested with SPEC CPU®2017 v1.1.9 on 2024-06-13 10:36:26-0400.

Report generated on 2024-07-08 11:10:10 by CPU2017 PDF formatter v6716.

Originally published on 2024-07-07.