SPEC CPU®2017 Integer Rate Result

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New H3C Technologies Co., Ltd.

H3C UniServer R3950 G6 (AMD EPYC 9654)

SPECrate®2017_int_base =   873

SPECrate®2017_int_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Mar-2024
Software Availability: Nov-2023

Benchmark	Copies	Result
500.perlbench_r	192	697
502.gcc_r	192	594
505.mcf_r	192	1200
520.omnetpp_r	192	396
523.xalancbmk_r	192	871
525.x264_r	192	2300
531.deepsjeng_r	192	816
541.leela_r	192	804
548.exchange2_r	192	2240
557.xz_r	192	447

SPECrate®2017_int_base (873)

Hardware

CPU Name: AMD EPYC 9654
 Max MHz: 3700
 Nominal: 2400
Enabled: 96 cores, 1 chip, 2 threads/core
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: 384 MB I+D on chip per chip, 32 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) 5.14.0-362.8.1.el9_3.x86_64
Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
Parallel: No
Firmware: Version 6.30.28P91 released Mar-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.

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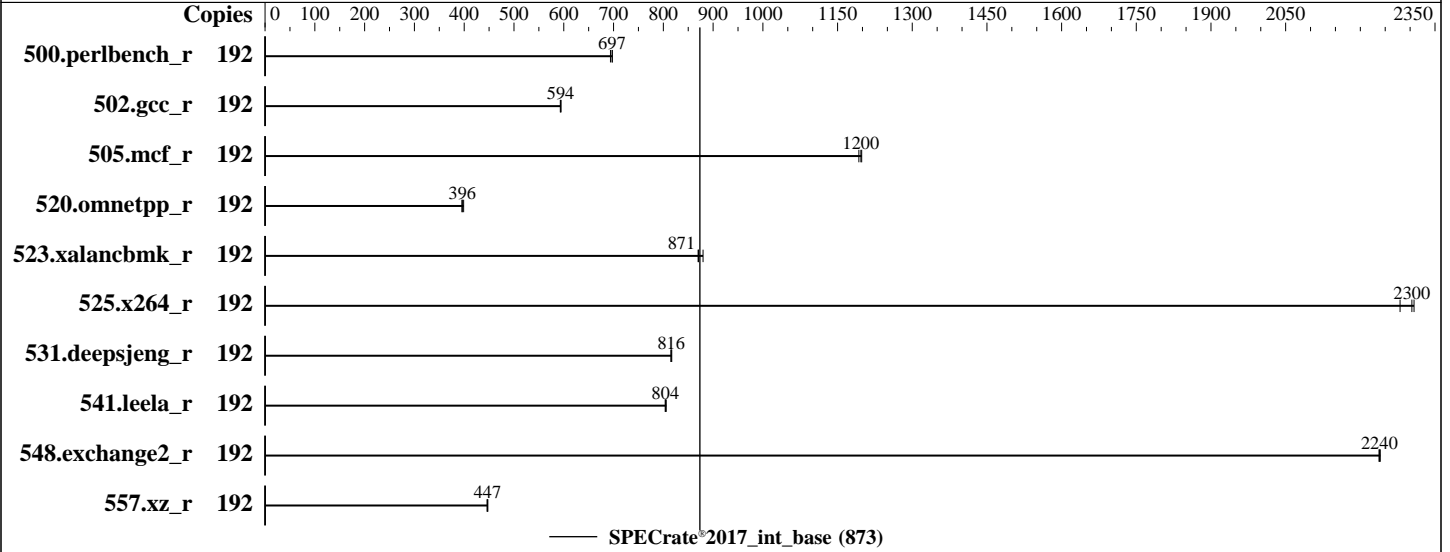| New H3C Technologies Co., Ltd.	SPECrate®2017_int_base = 873
H3C UniServer R3950 G6 (AMD EPYC 9654)	SPECrate®2017_int_peak = Not Run

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Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
500.perlbench_r	192	441	694	**438**	**697**	438	698							
502.gcc_r	192	**458**	**594**	458	593	457	594							
505.mcf_r	192	260	1190	**259**	**1200**	259	1200							
520.omnetpp_r	192	632	399	637	395	**636**	**396**							
523.xalancbmk_r	192	233	870	230	880	**233**	**871**							
525.x264_r	192	146	2310	**146**	**2300**	147	2280							
531.deepsjeng_r	192	270	815	269	817	**270**	**816**							
541.leela_r	192	395	806	**395**	**804**	396	804							
548.exchange2_r	192	225	2240	**225**	**2240**	225	2240							
557.xz_r	192	465	446	**464**	**447**	463	448							

SPECrate®2017_int_base = 873

SPECrate®2017_int_peak = Not Run

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

Compiler Notes

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

Submit Notes

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

Operating System Notes

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

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

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

To enable Transparent Hugepages (THP) for all allocations:
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

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Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
     "/home/spec2017/amd_rate_aocc400_znver4_A_lib/lib:/home/spec2017/amd_rate_aocc400_znver4_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:
cTDP Control: Manual
cTDP: 400
PPT Control: Manual
PPT: 400
Determinism Slider set to Power
NUMA nodes per socket: NPS4
IOMMU: Auto
SVM Mode: Disabled

 Sysinfo program /home/spec2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Fri Mar 29 11:24:32 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
  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.el9)
 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
```

(Continued on next page)

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Platform Notes (Continued)

```
 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
    11:24:32 up 3 min,  1 user,  load average: 0.29, 0.34, 0.17
   USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1      21Aug23  8.00s  1.39s  0.19s /bin/bash ./amd_rate_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) 0
   data seg size               (kbytes, -d) unlimited
   scheduling priority             (-e) 0
   file size                   (blocks, -f) unlimited
   pending signals                 (-i) 3092284
   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) 3092284
   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_aocc400_znver4_A1.py
   /bin/bash ./amd_rate_aocc400_znver4_A1.sh
   runcpu --config amd_rate_aocc400_znver4_A1.cfg --tune base --reportable --iterations 3 intrate
   runcpu --configfile amd_rate_aocc400_znver4_A1.cfg --tune base --reportable --iterations 3 --nopower
     --runmode rate --tune base --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/spec2017


    ------------------------------------------------------------
 6. /proc/cpuinfo
     model name      : AMD EPYC 9654 96-Core Processor
     vendor_id       : AuthenticAMD
```

(Continued on next page)

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Platform Notes (Continued)

```
      cpu family     : 25
      model          : 17
      stepping       : 1
      microcode      : 0xa101144
      bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
      TLB size       : 3584 4K pages
      cpu cores      : 96
      siblings       : 192
      1 physical ids (chips)
      192 processors (hardware threads)
      physical id 0: core ids 0-95
      physical id 0: apicids 0-191
   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):                      192
     On-line CPU(s) list:         0-191
     Vendor ID:                   AuthenticAMD
     BIOS Vendor ID:              Advanced Micro Devices, Inc.
     Model name:                  AMD EPYC 9654 96-Core Processor
     BIOS Model name:             AMD EPYC 9654 96-Core Processor
     CPU family:                  25
     Model:                       17
     Thread(s) per core:          2
     Core(s) per socket:          96
     Socket(s):                   1
     Stepping:                    1
     Frequency boost:             enabled
     CPU max MHz:                 3707.8120
     CPU min MHz:                 1500.0000
     BogoMIPS:                    4792.80
     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 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 vnmi
                                  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:                   3 MiB (96 instances)
     L1i cache:                   3 MiB (96 instances)
```

(Continued on next page)

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Platform Notes (Continued)

```
  L2 cache:                          96 MiB (96 instances)
  L3 cache:                          384 MiB (12 instances)
  NUMA node(s):                      4
  NUMA node0 CPU(s):                 0-23,96-119
  NUMA node1 CPU(s):                 24-47,120-143
  NUMA node2 CPU(s):                 48-71,144-167
  NUMA node3 CPU(s):                 72-95,168-191
  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
                                     always-on, RSB filling, PBRSB-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       3M  8 Data            1    64      1              64
      L1i       32K       3M  8 Instruction     1    64      1              64
      L2         1M      96M  8 Unified         2  2048      1              64
      L3        32M     384M 16 Unified         3 32768      1              64


  -----------------------------------------------------------
  8. numactl --hardware
  NOTE: a numactl 'node' might or might not correspond to a physical chip.
    available: 4 nodes (0-3)
    node 0 cpus: 0-23,96-119
    node 0 size: 192649 MB
    node 0 free: 191786 MB
    node 1 cpus: 24-47,120-143
    node 1 size: 193524 MB
    node 1 free: 189782 MB
    node 2 cpus: 48-71,144-167
    node 2 size: 193524 MB
    node 2 free: 192692 MB
    node 3 cpus: 72-95,168-191
    node 3 size: 193415 MB
    node 3 free: 191974 MB
    node distances:
    node   0   1   2   3
      0:  10  12  12  12
      1:  12  10  12  12
      2:  12  12  10  12
      3:  12  12  12  10


  -----------------------------------------------------------
  9. /proc/meminfo
    MemTotal:      791667616 kB


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

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

(Continued on next page)

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Platform Notes (Continued)

```
 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           NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
                     dbus-broker getty@ insights-client-boot irqbalance kdump ksm ksmtuned lm_sensors
                     lvm2-monitor mdmonitor microcode nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark
                     sshd sssd systemd-boot-update systemd-network-generator tuned udisks2
   enabled-runtime   systemd-remount-fs
   disabled          blk-availability chrony-wait console-getty cpupower debug-shell dnf-system-upgrade
                     fancontrol firewalld hwloc-dump-hwdata kvm_stat man-db-restart-cache-update nftables
                     powertop rdisc rhcd rhsm rhsm-facts rpmdb-rebuild selinux-check-proper-disable
                     serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysext
   indirect          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=(hd1,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


   -----------------------------------------------------------
 15. cpupower frequency-info
   analyzing CPU 0:
     current policy: frequency should be within 1.50 GHz and 2.40 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:  2400MHz


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


   -----------------------------------------------------------
 17. 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
```

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Platform Notes (Continued)

```
  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/spec2017
  Filesystem           Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   819G   11G  808G   2% /home


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

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Platform Notes (Continued)

```
   ----------------------------------------------------------
   24. BIOS
   (This section combines info from /sys/devices and dmidecode.)
     BIOS Vendor:       American Megatrends International, LLC.
     BIOS Version:      6.30.28P91
     BIOS Date:         03/13/2024
     BIOS Revision:     5.27
```

Compiler Version Notes

```
==============================================================================
C        | 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base) 557.xz_r(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++      | 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base) 541.leela_r(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
------------------------------------------------------------------------------


==============================================================================
Fortran | 548.exchange2_r(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
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
```
clang
```

C++ benchmarks:
```
clang++
```

Fortran benchmarks:
```
flang
```

SPEC CPU®2017 Integer Rate Result

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New H3C Technologies Co., Ltd.

H3C UniServer R3950 G6 (AMD EPYC 9654)

SPECrate®2017_int_base = 873

SPECrate®2017_int_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Mar-2024
Software Availability: Nov-2023

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 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather
-z muldefs -O3 -march=znver4 -fveclib=AMDLIBM -ffast-math
-fstruct-layout=7 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays -fstrip-mining
-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lflang
-lamdalloc
```

C++ benchmarks:
```
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -z muldefs -O3
-march=znver4 -fveclib=AMDLIBM -ffast-math
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt
-fvirtual-function-elimination -fvisibility=hidden -lamdlibm -lflang
-lamdalloc-ext
```

Fortran benchmarks:
```
-m64 -flto -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=znver4
-fveclib=AMDLIBM -ffast-math -fepilog-vectorization-of-inductions
-mllvm -optimize-strided-mem-cost -floop-transform
-mllvm -unroll-aggressive -mllvm -unroll-threshold=500 -lamdlibm
-lflang -lamdalloc
```

SPEC CPU®2017 Integer Rate Result

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New H3C Technologies Co., Ltd.

SPECrate®2017_int_base =   873

H3C UniServer R3950 G6 (AMD EPYC 9654)

SPECrate®2017_int_peak = Not Run

Base Other Flags

C benchmarks:

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

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/New_H3C-Platform-AMD-Settings-V1.4-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-V1.4-Genoa.xml
http://www.spec.org/cpu2017/flags/aocc400-flags.xml

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 2024-03-29 11:24:31-0400.
Report generated on 2024-10-09 14:00:50 by CPU2017 PDF formatter v6716.
Originally published on 2024-10-09.