SPEC CPU®2017 Integer Speed Result
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xFusion
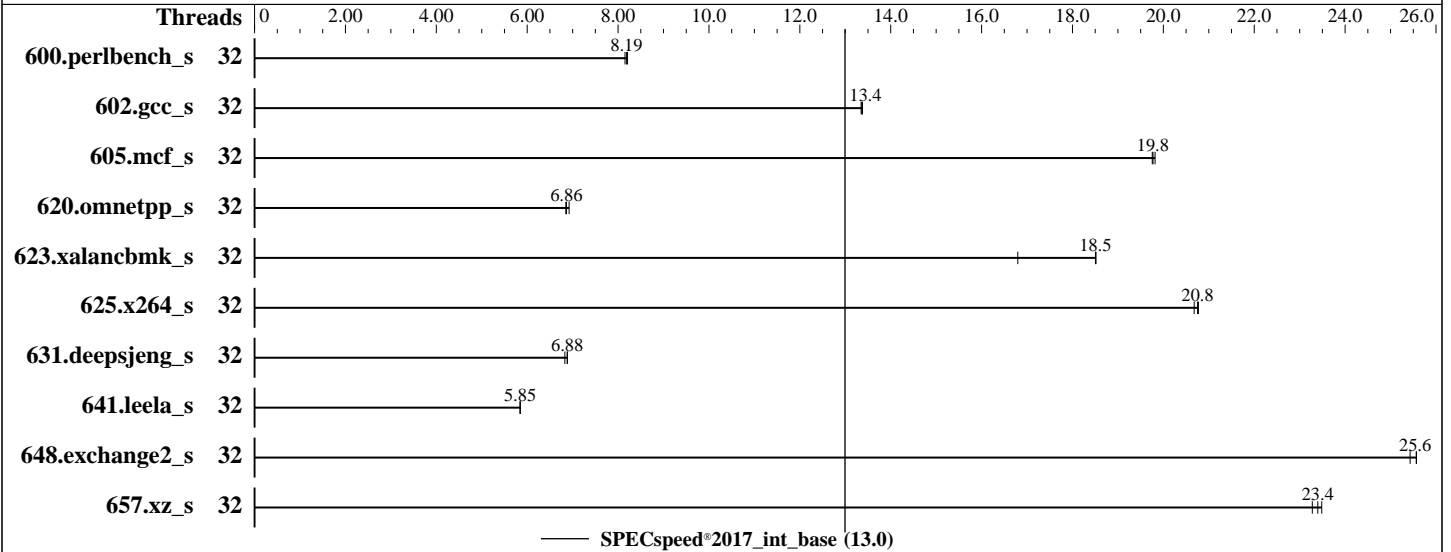
FusionServer 1158H V7
(AMD EPYC 9124)

$SPECspeed^{®}2017\_int\_base =$ 13.0

$SPECspeed^{®}2017\_int\_peak =$ Not Run

CPU2017 License:	6488	
Test Sponsor:	xFusion	
Tested by:	xFusion	

Test Date:	Sep-2024
Hardware Availability:	May-2024
Software Availability:	Dec-2023

Threads

Benchmark	Threads	Value
600.perlbench_s	32	8.19
602.gcc_s	32	13.4
605.mcf_s	32	19.8
620.omnetpp_s	32	6.86
623.xalancbmk_s	32	18.5
625.x264_s	32	20.8
631.deepsjeng_s	32	6.88
641.leela_s	32	5.85
648.exchange2_s	32	25.6
657.xz_s	32	23.4

——— SPECspeed®2017_int_base (13.0)

Hardware

CPU Name:	AMD EPYC 9124
Max MHz:	3700
Nominal:	3000
Enabled:	16 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:	64 MB I+D on chip per chip, 16 MB shared / 4 cores
Other:	None
Memory:	384 GB (12 x 32 GB 2Rx8 PC5-4800B-R)
Storage:	1 x 1.6 TB Nvme SSD
Other:	CPU Cooling: Air

Software

OS:	Red Hat Enterprise Linux release 9.0 (Plow) 5.14.0-70.13.1.el9_0.x86_64
Compiler:	C/C++/Fortran: Version 4.0.0 of AOCC
Parallel:	Yes
Firmware:	Version 2.09.19 released Jul-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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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	32	**217**	**8.19**	216	8.21	218	8.15							
602.gcc_s	32	**298**	**13.4**	298	13.4	298	13.3							
605.mcf_s	32	238	19.8	239	19.8	**239**	**19.8**							
620.omnetpp_s	32	236	6.92	**238**	**6.86**	238	6.85							
623.xalancbmk_s	32	**76.6**	**18.5**	76.5	18.5	84.4	16.8							
625.x264_s	32	**85.0**	**20.8**	84.9	20.8	85.3	20.7							
631.deepsjeng_s	32	**208**	**6.88**	208	6.88	210	6.83							
641.leela_s	32	292	5.85	**292**	**5.85**	292	5.85							
648.exchange2_s	32	116	25.4	**115**	**25.6**	115	25.6							
657.xz_s	32	266	23.3	263	23.5	**264**	**23.4**							

SPECspeed®2017_int_base =	**13.0**
SPECspeed®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.
```

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Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-31"
LD_LIBRARY_PATH = "/cpu2017/amd_speed_aocc400_znver4_A_lib/lib:"
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 = "32"
```

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:
 Determinism Control = Manual
 Determinism Enable = Power
 TDP Control = Manual
 TDP = 400
 PPT Control = Manual
 PPT = 400
 NUMA Nodes Per Socket = NPS1

 Sysinfo program /cpu2017/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost.localdomain Fri Sep 13 03:57:57 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 250 (250-6.el9_0)
 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
```

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Test Date: Sep-2024
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Platform Notes (Continued)

```
  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 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
    x86_64 x86_64 GNU/Linux


  ------------------------------------------------------------
  2. w
     03:57:57 up 28 min,  1 user,  load average: 0.29, 3.81, 10.19
    USER      TTY          LOGIN@   IDLE   JCPU   PCPU WHAT
    root      pts/0       03:31    5.00s  0.97s  0.00s tail -100f nohup.out


  ------------------------------------------------------------
  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) 6191057
    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) 6191057
    virtual memory              (kbytes, -v) unlimited
    file locks                      (-x) unlimited

  ------------------------------------------------------------
  5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize 30
   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 intspeed
   runcpu --configfile amd_speed_aocc400_znver4_A1.cfg --tune base --reportable --iterations 3 --nopower
     --runmode speed --tune base --size test:train:refspeed intspeed --nopreenv --note-preenv --logfile
     $SPEC/tmp/CPU2017.011/templogs/preenv.intspeed.011.0.log --lognum 011.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
```

(Continued on next page)

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Platform Notes (Continued)

```
  $SPEC = /cpu2017


  -------------------------------------------------------------
6. /proc/cpuinfo
     model name       : AMD EPYC 9124 16-Core Processor
     vendor_id        : AuthenticAMD
     cpu family       : 25
     model            : 17
     stepping         : 1
     microcode        : 0xa101148
     bugs             : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
     TLB size         : 3584 4K pages
     cpu cores        : 16
     siblings         : 32
     1 physical ids (chips)
     32 processors (hardware threads)
     physical id 0: core ids 0-3,8-11,16-19,24-27
     physical id 0: apicids 0-7,16-23,32-39,48-55
  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):                    32
   On-line CPU(s) list:       0-31
   Vendor ID:                 AuthenticAMD
   BIOS Vendor ID:            Advanced Micro Devices, Inc.
   Model name:                AMD EPYC 9124 16-Core Processor
   BIOS Model name:           AMD EPYC 9124 16-Core Processor
   CPU family:                25
   Model:                     17
   Thread(s) per core:        2
   Core(s) per socket:        16
   Socket(s):                 1
   Stepping:                  1
   Frequency boost:           enabled
   CPU max MHz:               3711.9141
   CPU min MHz:               1500.0000
   BogoMIPS:                  5990.81
   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 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 ibrs ibpb stibp 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 arat npt lbrv
                              svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists
                              pausefilter pfthreshold avic v_vmsave_vmload vgif v_spec_ctrl avx512vbmi
                              umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg
```

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Platform Notes (Continued)

```
                                    avx512_vpopcntdq la57 rdpid overflow_recov succor smca fsrm flush_l1d
  Virtualization:                   AMD-V
  L1d cache:                        512 KiB (16 instances)
  L1i cache:                        512 KiB (16 instances)
  L2 cache:                         16 MiB (16 instances)
  L3 cache:                         64 MiB (4 instances)
  NUMA node(s):                     1
  NUMA node0 CPU(s):                0-31
  Vulnerability Itlb multihit:      Not affected
  Vulnerability L1tf:               Not affected
  Vulnerability Mds:                Not affected
  Vulnerability Meltdown:           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; Retpolines, IBPB conditional, IBRS_FW, STIBP always-on, RSB
                                    filling
  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     512K   8 Data            1    64      1             64
    L1i      32K     512K   8 Instruction    1    64      1             64
    L2        1M      16M   8 Unified         2  2048      1             64
    L3       16M      64M  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: 0-31
  node 0 size: 385971 MB
  node 0 free: 384926 MB
  node distances:
  node   0
    0:  10


----------------------------------------------------------
9. /proc/meminfo
  MemTotal:       395234408 kB


----------------------------------------------------------
10. who -r
  run-level 3 Sep 13 03:29


----------------------------------------------------------
11. Systemd service manager version: systemd 250 (250-6.el9_0)
  Default Target  Status
  multi-user      degraded


----------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
    UNIT          LOAD   ACTIVE SUB    DESCRIPTION
  * sep5.service loaded failed failed systemd script to load sep5 driver at boot time


----------------------------------------------------------
13. Services, from systemctl list-unit-files
  STATE           UNIT FILES
  enabled         NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd crond
                  dbus-broker firewalld getty@ irqbalance kdump mdmonitor microcode nis-domainname rhsmcertd
```

(Continued on next page)

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Platform Notes (Continued)

```
                    rsyslog selinux-autorelabel-mark sep5 sshd sssd systemd-network-generator tuned udisks2
   enabled-runtime  systemd-remount-fs
   disabled         console-getty cpupower debug-shell hwloc-dump-hwdata kvm_stat man-db-restart-cache-update
                    nftables numad rdisc rhsm rhsm-facts rpmdb-rebuild 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

  -------------------------------------------------------------
  14. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
    root=UUID=bf6bc58c-3b41-4aaf-9518-ed72b3e61e3a
    ro
    crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
    resume=UUID=ec5e493d-3de8-4312-8688-2d477be3721e
    nohz_full=1-31

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

  -------------------------------------------------------------
  16. tuned-adm active
    Current active profile: accelerator-performance latency-performance 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
```

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Platform Notes (Continued)

```
    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 9.0 (Plow)
    redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
    system-release Red Hat Enterprise Linux release 9.0 (Plow)


    ----------------------------------------------------------------
 21. Disk information
 SPEC is set to: /cpu2017
    Filesystem     Type  Size  Used Avail Use% Mounted on
    /dev/nvme0n1p4 xfs   450G   14G  437G   4% /


    ----------------------------------------------------------------
 22. /sys/devices/virtual/dmi/id
      Product:       1158H V7
      Product Family: Genoa


    ----------------------------------------------------------------
 23. dmidecode
    Additional information from dmidecode 3.3 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 Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800



    ----------------------------------------------------------------
 24. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       INSYDE Corp.
    BIOS Version:      2.09.19
    BIOS Date:         07/18/2024
    BIOS Revision:     2.9
```

Compiler Version Notes

```
==========================================================================================
C       | 600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base) 657.xz_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
------------------------------------------------------------------------------------------
```

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Compiler Version Notes (Continued)

```
==============================================================================
C++     | 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base) 641.leela_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
------------------------------------------------------------------------------


==============================================================================
Fortran | 648.exchange2_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
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
`clang`

C++ benchmarks:
`clang++`

Fortran benchmarks:
`flang`

Base Portability Flags

600.perlbench_s: `-DSPEC_LINUX_X64 -DSPEC_LP64`
602.gcc_s: `-DSPEC_LP64`
605.mcf_s: `-DSPEC_LP64`
620.omnetpp_s: `-DSPEC_LP64`
623.xalancbmk_s: `-DSPEC_LINUX -DSPEC_LP64`
625.x264_s: `-DSPEC_LP64`
631.deepsjeng_s: `-DSPEC_LP64`
641.leela_s: `-DSPEC_LP64`
648.exchange2_s: `-DSPEC_LP64`
657.xz_s: `-DSPEC_LP64`

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(AMD EPYC 9124)

$SPECspeed®2017\_int\_base =$ 13.0

$SPECspeed®2017\_int\_peak =$ Not Run

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Sep-2024
Hardware Availability: May-2024
Software Availability: Dec-2023

Base Optimization Flags

C benchmarks:
```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -fopenmp=libomp -lomp -lamdlibm -lflang
-lamdalloc
```

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
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -DSPEC_OPENMP -zopt
-fvirtual-function-elimination -fvisibility=hidden -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc-ext
```

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 -O3 -march=znver4 -fveclib=AMDLIBM
-ffast-math -fopenmp -flto -mllvm -optimize-strided-mem-cost
-mllvm -unroll-aggressive -mllvm -unroll-threshold=150 -fopenmp=libomp
-lomp -lamdlibm -lflang -lamdalloc
```

Base Other Flags

C benchmarks:
```
-Wno-return-type -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/aocc400-flags.html
http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-AMD-V1.1.html

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https://www.spec.org/

SPEC CPU®2017 Integer Speed Result

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc400-flags.xml
http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-AMD-V1.1.xml

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Tested with SPEC CPU®2017 v1.1.9 on 2024-09-12 15:57:57-0400.
Report generated on 2024-10-09 14:04:50 by CPU2017 PDF formatter v6716.
Originally published on 2024-10-09.