



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

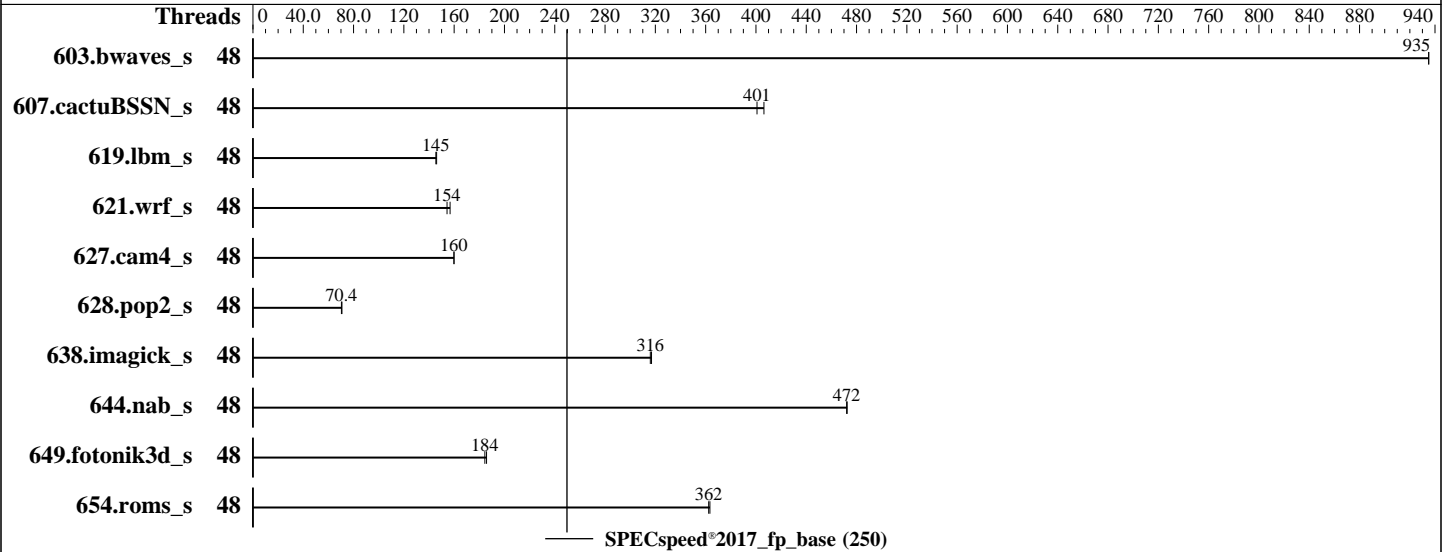
Test Date: Nov-2022

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Nov-2022



Hardware

CPU Name: AMD EPYC 9224
 Max MHz: 3700
 Nominal: 2500
 Enabled: 48 cores, 2 chips
 Orderable: 1,2 chips
 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 / 6 cores
 Other: None
 Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 125 GB on tmpfs
 Other: None

Software

OS: Ubuntu 22.04.1 LTS
 5.15.0-46-generic
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC
 Parallel: Yes
 Firmware: Version 1.0.2 released Oct-2022
 File System: tmpfs
 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 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Nov-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	48	63.1	935	<u>63.1</u>	<u>935</u>									
607.cactuBSSN_s	48	41.0	406	<u>41.6</u>	<u>401</u>									
619.lbm_s	48	35.9	146	<u>36.0</u>	<u>145</u>									
621.wrf_s	48	<u>85.7</u>	<u>154</u>	84.4	157									
627.cam4_s	48	<u>55.5</u>	<u>160</u>	55.4	160									
628.pop2_s	48	<u>169</u>	<u>70.4</u>	168	70.8									
638.imagick_s	48	<u>45.7</u>	<u>316</u>	45.5	317									
644.nab_s	48	37.0	473	<u>37.0</u>	<u>472</u>									
649.fotonik3d_s	48	<u>49.4</u>	<u>184</u>	49.1	186									
654.roms_s	48	43.3	363	<u>43.4</u>	<u>362</u>									

SPECspeed®2017_fp_base = 250

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.

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Nov-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Operating System Notes (Continued)

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.
To always enable THP for peak runs of:
603.bwaves_s, 607.cactuBSSN_s, 619.lbm_s, 627.cam4_s, 628.pop2_s, 638.imagick_s, 644.nab_s, 649.fotonik3d_s:
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled; echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
To disable THP for peak runs of 621.wrf_s:
'echo never > /sys/kernel/mm/transparent_hugepage/enabled; echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
To enable THP only on request for peak runs of 654.roms_s:
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled; echo madvise > /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 = "0-47"
LD_LIBRARY_PATH =
"/mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b/amd_speed_aocc400_genoa_B_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 = "48"

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.

Benchmark run from a 125 GB ramdisk created with the cmd: "mount -t tmpfs -o size=125G tmpfs /mnt/ramdisk"



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2022

Hardware Availability: Feb-2023

Software Availability: Nov-2022

Platform Notes

BIOS settings:

DRAM Refresh Delay : Performance
 DIMM Self Healing on
 Uncorrectable Memory Error : Disabled
 Logical Processor : Disabled
 Virtualization Technology : Disabled
 L3 Cache as NUMA Domain : Enabled

System Profile : Custom
 C-States : Disabled
 Memory Patrol Scrub : Disabled
 PCI ASPM L1 Link
 Power Management : Disabled
 Determinism Slider : Power Determinism
 Algorithm Performance
 Boost Disable (ApbDis) : Enabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.8-aocc400-Blb/bin/sysinfo
 Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
 running on amd-sut Thu Nov 10 17:05:25 2022

SUT (System Under Test) info as seen by some common utilities.
 For more information on this section, see
<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

From /proc/cpuinfo

```

model name : AMD EPYC 9224 24-Core Processor
 2 "physical id"s (chips)
 48 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following
excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 24
siblings : 24
physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
  
```

From lscpu from util-linux 2.37.2:

```

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): 48
On-line CPU(s) list: 0-47
Vendor ID: AuthenticAMD
Model name: AMD EPYC 9224 24-Core Processor
CPU family: 25
  
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: Nov-2022

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

```

Model: 17
Thread(s) per core: 1
Core(s) per socket: 24
Socket(s): 2
Stepping: 1
Frequency boost: enabled
CPU max MHz: 3707.0000
CPU min MHz: 400.0000
BogoMIPS: 5001.57
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
aperfmpperf 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
bpxt 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 cppc 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 avx512_vpopcntdq
la57 rdpid overflow_recov succor smca fsrm flush_lld
Virtualization: AMD-V
L1d cache: 1.5 MiB (48 instances)
L1i cache: 1.5 MiB (48 instances)
L2 cache: 48 MiB (48 instances)
L3 cache: 128 MiB (8 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-5
NUMA node1 CPU(s): 12-17
NUMA node2 CPU(s): 18-23
NUMA node3 CPU(s): 6-11
NUMA node4 CPU(s): 24-29
NUMA node5 CPU(s): 36-41
NUMA node6 CPU(s): 42-47
NUMA node7 CPU(s): 30-35
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 and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: Nov-2022

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

pointer sanitization
 Vulnerability Spectre v2: Mitigation; Retpolines, IBPB conditional, IBRS_FW,
 STIBP disabled, 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	1.5M	8	Data	1	64	1	64
L1i	32K	1.5M	8	Instruction	1	64	1	64
L2	1M	48M	8	Unified	2	2048	1	64
L3	16M	128M	16	Unified	3	16384	1	64

/proc/cpuinfo cache data
cache size : 1024 KB

From numactl --hardware

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

available: 8 nodes (0-7)
 node 0 cpus: 0 1 2 3 4 5
 node 0 size: 193080 MB
 node 0 free: 192530 MB
 node 1 cpus: 12 13 14 15 16 17
 node 1 size: 193534 MB
 node 1 free: 192960 MB
 node 2 cpus: 18 19 20 21 22 23
 node 2 size: 193516 MB
 node 2 free: 193154 MB
 node 3 cpus: 6 7 8 9 10 11
 node 3 size: 193498 MB
 node 3 free: 189932 MB
 node 4 cpus: 24 25 26 27 28 29
 node 4 size: 193534 MB
 node 4 free: 192857 MB
 node 5 cpus: 36 37 38 39 40 41
 node 5 size: 193534 MB
 node 5 free: 193101 MB
 node 6 cpus: 42 43 44 45 46 47
 node 6 size: 193509 MB
 node 6 free: 192553 MB
 node 7 cpus: 30 31 32 33 34 35
 node 7 size: 193534 MB
 node 7 free: 192652 MB
 node distances:
 node 0 1 2 3 4 5 6 7
 0: 10 11 11 11 32 32 32 32
 1: 11 10 11 11 32 32 32 32

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Nov-2022

Hardware Availability: Feb-2023

Software Availability: Nov-2022

Platform Notes (Continued)

```

2: 11 11 10 11 32 32 32 32
3: 11 11 11 10 32 32 32 32
4: 32 32 32 32 10 11 11 11
5: 32 32 32 32 11 10 11 11
6: 32 32 32 32 11 11 10 11
7: 32 32 32 32 11 11 11 10

```

From /proc/meminfo

```

MemTotal:      1584887776 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

/sbin/tuned-adm active
  Current active profile: latency-performance

```

```

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has
performance

```

```

/usr/bin/lsb_release -d
Ubuntu 22.04.1 LTS

```

From /etc/*release* /etc/*version*

```

debian_version: bookworm/sid
os-release:
  PRETTY_NAME="Ubuntu 22.04.1 LTS"
  NAME="Ubuntu"
  VERSION_ID="22.04"
  VERSION="22.04.1 LTS (Jammy Jellyfish)"
  VERSION_CODENAME=jammy
  ID=ubuntu
  ID_LIKE=debian
  HOME_URL="https://www.ubuntu.com/"

```

uname -a:

```

Linux amd-sut 5.15.0-46-generic #49-Ubuntu SMP Thu Aug 4 18:03:25 UTC 2022 x86_64
x86_64 x86_64 GNU/Linux

```

Kernel self-reported vulnerability status:

```

CVE-2018-12207 (iTLB Multihit):          Not affected
CVE-2018-3620 (L1 Terminal Fault):       Not affected
Microarchitectural Data Sampling:       Not affected
CVE-2017-5754 (Meltdown):                Not affected
mmio_stale_data:                          Not affected
retbleed:                                 Not affected
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store
                                           Bypass disabled via prctl and

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Nov-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```

CVE-2017-5753 (Spectre variant 1):      seccomp
                                         Mitigation: usercopy/swapgs
                                         barriers and __user pointer
                                         sanitization
CVE-2017-5715 (Spectre variant 2):      Mitigation: Retpolines, IBPB:
                                         conditional, IBRS_FW, STIBP:
                                         disabled, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

```

run-level 3 Nov 10 15:28

```

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b
Filesystem      Type  Size  Used Avail Use% Mounted on
tmpfs            tmpfs 125G  3.4G 122G   3% /mnt/ramdisk

```

```

From /sys/devices/virtual/dmi/id
Vendor:          Dell Inc.
Product:         PowerEdge R7625
Product Family: PowerEdge
Serial:          1234567

```

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:
 24x 80AD000080AD HMC94MEBRA109N 64 GB 2 rank 4800

```

```

BIOS:
  BIOS Vendor:      Dell Inc.
  BIOS Version:     1.0.2
  BIOS Date:        10/17/2022
  BIOS Revision:    1.0

```

(End of data from sysinfo program)

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#389 2022_10_07) (based on
LLVM Mirror.Version.14.0.6)
Target: x86_64-unknown-linux-gnu
Thread model: posix

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Nov-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Compiler Version Notes (Continued)

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

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

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/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#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/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#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Nov-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

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=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 -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

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: Nov-2022

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Base Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-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
```

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
```



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 250

PowerEdge R7625 (AMD EPYC 9224 24-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: Nov-2022

Test Sponsor: Dell Inc.

Hardware Availability: Feb-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

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/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.0.html>

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/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.0.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 v1.1.8 on 2022-11-10 12:05:24-0500.

Report generated on 2023-02-01 18:19:44 by CPU2017 PDF formatter v6442.

Originally published on 2023-02-01.