



SPEC CPU®2017 Integer Rate Result

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Supermicro

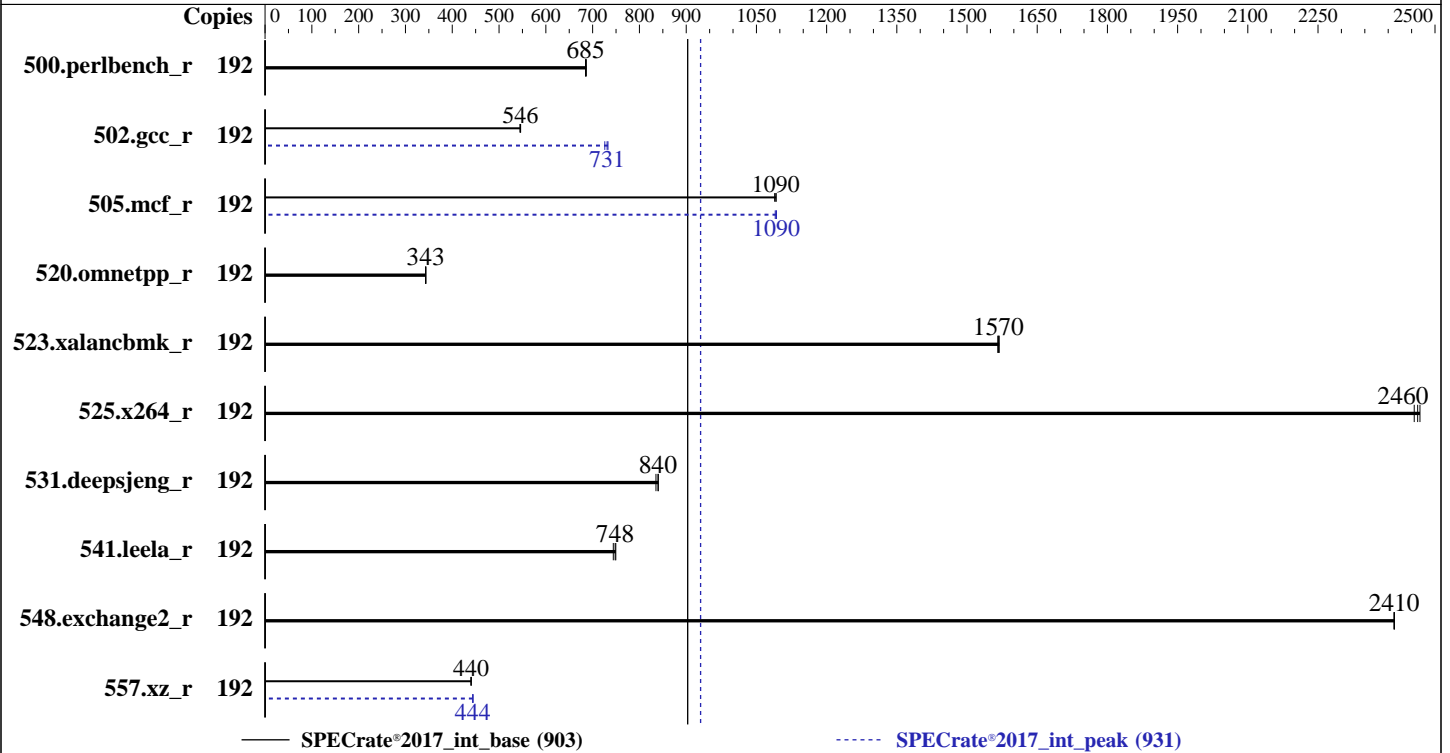
Hyper A+ Server AS -1115HS-TNR
(H13SSH, AMD EPYC 9655)

SPECrate®2017_int_base = 903

SPECrate®2017_int_peak = 931

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Feb-2025
Hardware Availability: Oct-2024
Software Availability: Feb-2025



Hardware

CPU Name: AMD EPYC 9655
Max MHz: 4500
Nominal: 2600
Enabled: 96 cores, 1 chip, 2 threads/core
Orderable: 1 chip
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 1 MB I+D on chip per core
L3: 384 MB I+D on chip per chip, 32 MB shared / 8 cores
Other: None
Memory: 512 GB (8 x 64 GB 2Rx4 PC5-6400B-R, running at 5200)
Storage: 1 x 960 GB NVMe SSD
Other: CPU Cooling: Air

Software

OS: Ubuntu 24.04.2 LTS
Kernel 6.8.0-54-generic
Compiler: C/C++/Fortran: Version 5.0.0 of AOCC
Parallel: No
Firmware: Version 3.3 released Feb-2025
File System: ext4
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	192	445	687	446	685	446	685	192	445	687	446	685	446	685
502.gcc_r	192	498	546	498	546	499	545	192	372	731	371	733	374	726
505.mcf_r	192	284	1090	285	1090	284	1090	192	284	1090	285	1090	284	1090
520.omnetpp_r	192	733	344	734	343	735	343	192	733	344	734	343	735	343
523.xalancbmk_r	192	129	1570	129	1570	129	1570	192	129	1570	129	1570	129	1570
525.x264_r	192	136	2460	137	2460	136	2470	192	136	2460	137	2460	136	2470
531.deepsjeng_r	192	263	835	262	840	262	840	192	263	835	262	840	262	840
541.leela_r	192	424	750	425	748	427	744	192	424	750	425	748	427	744
548.exchange2_r	192	208	2410	208	2410	209	2410	192	208	2410	208	2410	209	2410
557.xz_r	192	471	440	471	441	471	440	192	467	444	467	444	467	444

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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:

```
LD_LIBRARY_PATH =  
    "/home/cpu2017/amd_rate_aocc500_znver5_A_lib/lib:/home/cpu2017/amd_rate_aocc500_znver5_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:

NUMA Nodes Per Socket = NPS4
Determinism Control = Manual
Determinism Enable = Power
TDP Control = Manual
TDP = 400
Package Power Limit Control = Manual
Package Power Limit = 400
TSME = Disabled

```
Sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on as-1115hs-tnr-9655 Thu Feb 27 09:53:09 2025
```

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 255 (255.4-1ubuntu8.5)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release

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Platform Notes (Continued)

20. Disk information

21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

1. `uname -a`

```
Linux as-1115hs-tnr-9655 6.8.0-54-generic #56-Ubuntu SMP PREEMPT_DYNAMIC Sat Feb 8 00:37:57 UTC 2025
x86_64 x86_64 x86_64 GNU/Linux
```

2. `w`

```
09:53:09 up 3 min, 1 user, load average: 0.15, 0.18, 0.08
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU   WHAT
smc       tty1    -                09:50   5.00s  0.07s  0.05s  sudo su -
```

3. Username

```
From environment variable $USER: root
From the command 'logname': smc
```

4. `ulimit -a`

```
time(seconds)          unlimited
file(blocks)            unlimited
data(kbytes)            unlimited
stack(kbytes)           unlimited
coredump(blocks)        0
memory(kbytes)          unlimited
locked memory(kbytes)  2097152
process                 2061720
nofiles                 1024
vmemory(kbytes)         unlimited
locks                   unlimited
rtprio                  0
```

5. `sysinfo process ancestry`

```
/sbin/init
/bin/login -p --
-bash
sudo su -
sudo su -
su -
-bash
python3 ./run_amd_rate_aocc500_znver5_A1.py
/bin/bash ./amd_rate_aocc500_znver5_A1.sh
runcpu --config amd_rate_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 intrate
runcpu --configfile amd_rate_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode rate --tune base:peak --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/cpu2017
```

6. `/proc/cpuinfo`

```
model name      : AMD EPYC 9655 96-Core Processor
vendor_id       : AuthenticAMD
cpu family      : 26
```

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Platform Notes (Continued)

```
model          : 2
stepping       : 1
microcode      : 0xb00211e
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 192 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 2.39.3:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:         52 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                192
On-line CPU(s) list:  0-191
Vendor ID:             AuthenticAMD
BIOS Vendor ID:       Advanced Micro Devices, Inc.
Model name:            AMD EPYC 9655 96-Core Processor
BIOS Model name:      AMD EPYC 9655 96-Core Processor
BIOS CPU family:      107
CPU family:            26
Model:                 2
Thread(s) per core:   2
Core(s) per socket:   96
Socket(s):             1
Stepping:              1
Frequency boost:       enabled
CPU(s) scaling MHz:   58%
CPU max MHz:           4509.3750
CPU min MHz:           1500.0000
BogoMIPS:              5199.61
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 hw_pstate ssbd mba perfmon_v2
ibrs ibpb stibp ibrs_enhanced vmmcall fsgsbase tsc_adjust bmi1 avx2
smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt
xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local user_shstk avx_vnni avx512_bf16 clzero irperf
xsaveerptr rdpru wbnoinvd amd_ppin cppc arat npt lbrv svm_lock
nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
pfthreshold avic v_vmsave_vmload vgif x2avic v_spec_ctrl vnni
avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
avx512_vnni avx512_bitalg avx512_vpopcntdq la57 rdpid bus_lock_detect
movdiri movdir64b overflow_recov succor smca fsrm avx512_vp2intersect
flush_lld debug_swap
```

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Platform Notes (Continued)

```

Virtualization: AMD-V
L1d cache: 4.5 MiB (96 instances)
L1i cache: 3 MiB (96 instances)
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 Reg file data sampling: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec rstack overflow: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS; IBPB conditional; STIBP
always-on; RSB filling; PBR SB-eIBRS Not affected; BHI Not affected
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

```

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	4.5M	12	Data	1	64	1	64
L1i	32K	3M	8	Instruction	1	64	1	64
L2	1M	96M	16	Unified	2	1024	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: 128586 MB
node 0 free: 127749 MB
node 1 cpus: 24-47,120-143
node 1 size: 128964 MB
node 1 free: 128471 MB
node 2 cpus: 48-71,144-167
node 2 size: 129007 MB
node 2 free: 128460 MB
node 3 cpus: 72-95,168-191
node 3 size: 128945 MB
node 3 free: 128404 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: 527876692 kB

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Platform Notes (Continued)

10. who -r
run-level 3 Feb 27 09:50

11. Systemd service manager version: systemd 255 (255.4-lubuntu8.5)
Default Target Status
multi-user running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager apparmor apport blk-availability cloud-config cloud-final cloud-init cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager grub-common grub-initrd-fallback keyboard-setup lvm2-monitor multipathd networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog secureboot-db setvtrgb snapd sysstat systemd-networkd systemd-networkd-wait-online systemd-pstore systemd-resolved systemd-timesyncd thermald tuned ua-reboot-cmds ubuntu-advantage udisks2 ufw unattended-upgrades vgaauth
enabled-runtime	netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled	console-getty debug-shell iscsid nftables rsync serial-getty@ ssh systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysext systemd-time-wait-sync upower
indirect	systemd-sysupdate systemd-sysupdate-reboot uidd
masked	cryptdisks cryptdisks-early hwclock multipath-tools-boot screen-cleanup sudo x11-common

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.8.0-54-generic
root=UUID=2f33650d-d2f3-41f6-9a66-d290598ecbad
ro

14. cpupower frequency-info
analyzing CPU 51:
current policy: frequency should be within 1.50 GHz and 2.60 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: 2600MHz

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

16. 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

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Platform Notes (Continued)

```

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

```

```

-----
17. /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

```

```

-----
18. /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

```

```

-----
19. OS release
From /etc/*-release /etc/*-version
os-release Ubuntu 24.04.2 LTS

```

```

-----
20. Disk information
SPEC is set to: /home/cpu2017
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/nvme2nlp2  ext4  879G   16G  819G   2% /

```

```

-----
21. /sys/devices/virtual/dmi/id
Vendor:          Supermicro
Product:         AS -2015HS-TNR
Product Family:  SMC H13
Serial:          S515066X4516356

```

```

-----
22. 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:
  6x Micron Technology MTC40F2046S1RC64BD2 MWFF 64 GB 2 rank 6400, configured at 5200
  2x Micron Technology MTC40F2046S1RC64BD2 QSFF 64 GB 2 rank 6400, configured at 5200

```

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Platform Notes (Continued)

23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 3.3
BIOS Date: 02/04/2025
BIOS Revision: 5.35

Compiler Version Notes

C | 502.gcc_r(peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
557.xz_r(base, peak)
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C | 502.gcc_r(peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
557.xz_r(base, peak)
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C++ | 520.omnetpp_r(base, peak) 523.xalanbmk_r(base, peak) 531.deepsjeng_r(base, peak)
541.leela_r(base, peak)
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

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Compiler Version Notes (Continued)

Fortran | 548.exchange2_r(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

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 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather
-Wl,-mllvm -Wl,-extra-inliner -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -fno-PIE -no-pie -flto
-fstruct-layout=7 -mllvm -unroll-threshold=50
-mllvm -inline-threshold=1000 -fremap-arrays -fstrip-mining
-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lflang

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SPEC CPU®2017 Integer Rate Result

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Supermicro

Hyper A+ Server AS -1115HS-TNR
(H13SSH, AMD EPYC 9655)

SPECrate®2017_int_base = 903

SPECrate®2017_int_peak = 931

CPU2017 License: 001176
Test Sponsor: Supermicro
Tested by: Supermicro

Test Date: Feb-2025
Hardware Availability: Oct-2024
Software Availability: Feb-2025

Base Optimization Flags (Continued)

C benchmarks (continued):

-lamdalloc-ext -ldl

C++ benchmarks:

-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-do-block-reorder=advanced -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -flto -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt -fno-PIE -no-pie
-fvirtual-function-elimination -fvisibility=hidden
-mllvm -do-block-reorder=advanced -lamdlibm -lflang -lamdalloc-ext
-ldl

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 -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -flto
-fepilog-vectorization-of-inductions -mllvm -optimize-strided-mem-cost
-floop-transform -mllvm -unroll-aggressive -mllvm -unroll-threshold=500
-lamdlibm -lflang -lamdalloc -ldl

Base Other Flags

C benchmarks:

-Wno-unused-command-line-argument

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

Peak Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

(Continued on next page)



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Peak Compiler Invocation (Continued)

Fortran benchmarks:
flang

Peak Portability Flags

```
500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64
502.gcc_r: -D_FILE_OFFSET_BITS=64
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
```

Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: basepeak = yes

502.gcc_r: -m32 -flto -Wl,-mllvm -Wl,-ldist-scalar-expand
-fenable-aggressive-gather -Wl,-mllvm -Wl,-extra-inliner
-z muldefs -Ofast -march=znver5 -fveclib=AMDLIBM
-ffast-math -fstruct-layout=7 -mllvm -unroll-threshold=50
-freemap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -fgnu89-inline
-lamdalloc

505.mcf_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-extra-inliner -Ofast -march=znver5
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -freemap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lflang -lamdalloc-ext -ldl
```

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Peak Optimization Flags (Continued)

525.x264_r: basepeak = yes

```
557.xz_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand
-fenable-aggressive-gather -Wl,-mllvm -Wl,-extra-inliner
-Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=7 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lflang -lamdalloc-ext -ldl
```

C++ benchmarks:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: basepeak = yes

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

Fortran benchmarks:

548.exchange2_r: basepeak = yes

Peak Other Flags

C benchmarks (except as noted below):

-Wno-unused-command-line-argument

```
502.gcc_r: -L/usr/lib32 -Wno-unused-command-line-argument
-L/home/work/cpu2017/v119/aocc5/1316/amd_rate_aocc500_znver5_A_lib/lib32
```

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument



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The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.html>

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Turin-revD.html>

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

<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.xml>

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-Turin-revD.xml>

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