



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

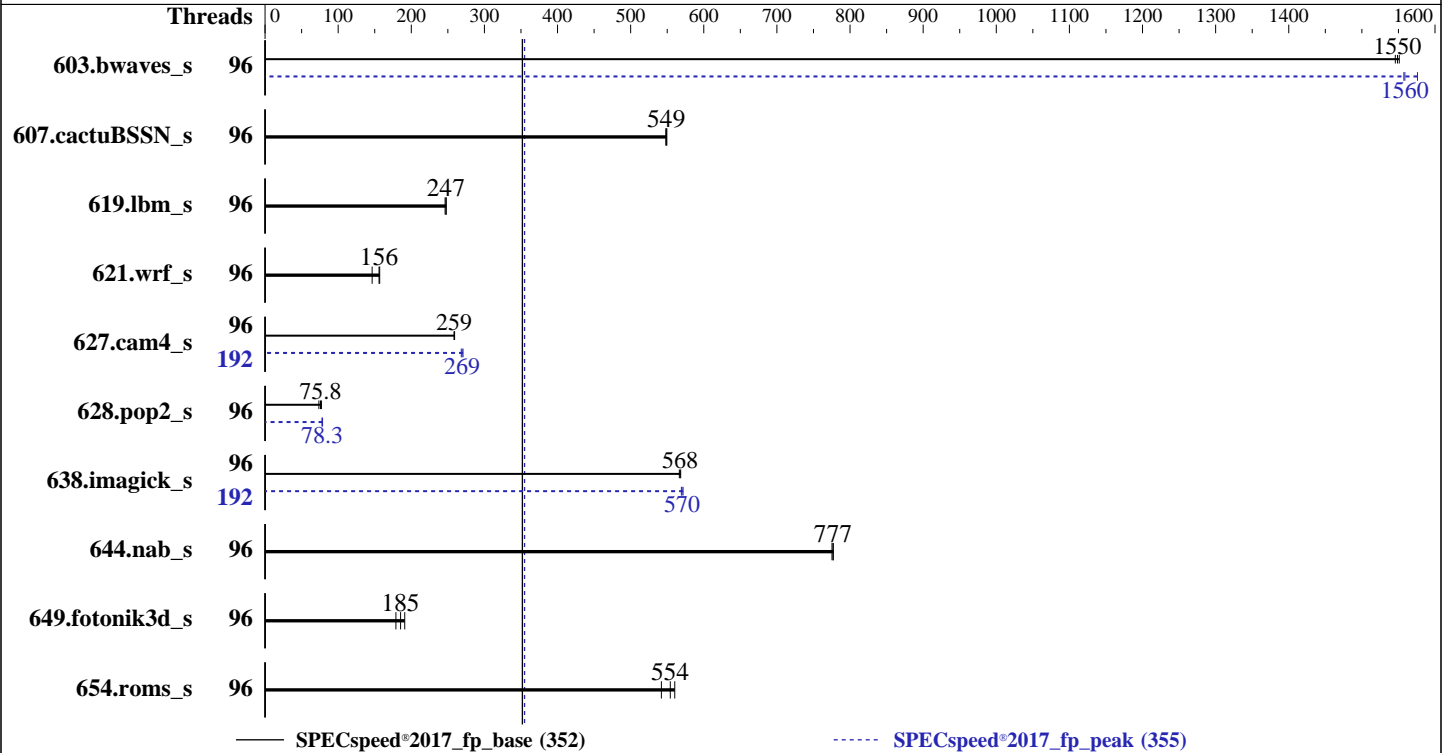
Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025



Hardware

CPU Name: AMD EPYC 9454
 Max MHz: 3800
 Nominal: 2750
 Enabled: 96 cores, 2 chips, 2 threads/core
 Orderable: 2 chips
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 256 MB I+D on chip per chip, 32 MB shared / 6 cores
 Other: None
 Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 1 x 800 GB NVMe SSD
 Other: CPU Cooling: Air

Software

OS: Ubuntu 24.04.1 LTS
 Kernel 6.8.0-52-generic
 Compiler: C/C++/Fortran: Version 5.0.0 of AOCC
 Parallel: Yes
 Firmware: Version 3.0a released Dec-2024
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: None
 Power Management: BIOS and OS set to max performance at the cost of additional power usage.



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECSpeed®2017_fp_base = 352

SPECSpeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	96	38.2	1550	38.0	1550	<u>38.1</u>	<u>1550</u>	96	<u>37.8</u>	<u>1560</u>	37.9	1560	37.4	1580
607.cactuBSSN_s	96	<u>30.4</u>	<u>549</u>	30.3	549	30.4	548	96	<u>30.4</u>	<u>549</u>	30.3	549	30.4	548
619.lbm_s	96	21.3	246	21.1	248	<u>21.2</u>	<u>247</u>	96	21.3	246	21.1	248	<u>21.2</u>	<u>247</u>
621.wrf_s	96	<u>84.8</u>	<u>156</u>	84.4	157	90.3	146	96	<u>84.8</u>	<u>156</u>	84.4	157	90.3	146
627.cam4_s	96	34.3	259	<u>34.3</u>	<u>259</u>	34.2	259	192	<u>32.9</u>	<u>269</u>	32.7	271	33.0	268
628.pop2_s	96	161	73.6	154	77.1	<u>157</u>	<u>75.8</u>	96	151	78.6	152	78.0	<u>152</u>	<u>78.3</u>
638.imagick_s	96	25.5	567	25.4	568	<u>25.4</u>	<u>568</u>	192	<u>25.3</u>	<u>570</u>	25.2	572	25.3	569
644.nab_s	96	22.5	777	22.5	775	<u>22.5</u>	<u>777</u>	96	22.5	777	22.5	775	<u>22.5</u>	<u>777</u>
649.fotonik3d_s	96	47.7	191	50.9	179	<u>49.2</u>	<u>185</u>	96	47.7	191	50.9	179	<u>49.2</u>	<u>185</u>
654.roms_s	96	<u>28.4</u>	<u>554</u>	29.1	542	28.1	560	96	<u>28.4</u>	<u>554</u>	29.1	542	28.1	560

SPECSpeed®2017_fp_base = **352**

SPECSpeed®2017_fp_peak = **355**

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.



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Environment Variables Notes

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

```
GOMP_CPU_AFFINITY = "0-191"
LD_LIBRARY_PATH =
    "/home/cpu2017/amd_speed_aocc500_znver5_A_lib/lib:/home/cpu2017/amd_speed_aocc500_znver5_A_lib/lib32:"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "192"
```

Environment variables set by runcpu during the 603.bwaves_s peak run:

```
GOMP_CPU_AFFINITY = "0-95"
```

Environment variables set by runcpu during the 627.cam4_s peak run:

```
GOMP_CPU_AFFINITY = "0-191"
```

Environment variables set by runcpu during the 628.pop2_s peak run:

```
GOMP_CPU_AFFINITY = "0-95"
```

Environment variables set by runcpu during the 638.imagick_s peak run:

```
GOMP_CPU_AFFINITY = "0-191"
```

General Notes

Binaries were compiled on a system with 2x AMD EPYC 9D64 CPU + 500GiB Memory using Ubuntu 22.04

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 = 300
Package Power Limit Control = Manual
Package Power Limit = 300
TSME = Disabled
```

```
Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on as-2025hs-tnr-9454 Sun Feb 9 00:32:07 2025
```

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

Table of contents

1. uname -a

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Platform Notes (Continued)

```

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. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS
-----

1. uname -a
Linux as-2025hs-tnr-9454 6.8.0-52-generic #53-Ubuntu SMP PREEMPT_DYNAMIC Sat Jan 11 00:06:25 UTC 2025
x86_64 x86_64 x86_64 GNU/Linux
-----

2. w
 00:32:07 up 17:08,  1 user,  load average: 6.11, 5.67, 3.34
USER  TTY      FROM          LOGIN@  IDLE   JCPU   PCPU   WHAT
lab   tty1    -             Sat07   17:06m 2.61s  2.55s sudo su -
-----

3. Username
From environment variable $USER:  root
From the command 'logname':      lab
-----

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                        6191010
nofiles                        1024
vmemory(kbytes)               unlimited
locks                          unlimited
rtprio                         0
-----

5. sysinfo process ancestry
/sbin/init
/bin/login -p --
-bash
sudo su -

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Platform Notes (Continued)

```
sudo su -
su -
-bash
python3 ./run_amd_speed_aocc500_znver5_A1.py
/bin/bash ./amd_speed_aocc500_znver5_A1.sh
runcpu --config amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 fpspeed
runcpu --configfile amd_speed_aocc500_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode speed --tune base:peak --size test:train:refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.002/templogs/preenv.fpspeed.002.0.log --lognum 002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

```
-----
6. /proc/cpuinfo
model name      : AMD EPYC 9454 48-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 srso
TLB size      : 3584 4K pages
cpu cores      : 48
siblings       : 96
2 physical ids (chips)
192 processors (hardware threads)
physical id 0: core ids 0-5,8-13,16-21,24-29,32-37,40-45,48-53,56-61
physical id 1: core ids 0-5,8-13,16-21,24-29,32-37,40-45,48-53,56-61
physical id 0: apicids 0-11,16-27,32-43,48-59,64-75,80-91,96-107,112-123
physical id 1: apicids 128-139,144-155,160-171,176-187,192-203,208-219,224-235,240-251
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 9454 48-Core Processor
BIOS Model name:       AMD EPYC 9454 48-Core Processor
BIOS CPU family:       107
CPU family:            25
Model:                 17
Thread(s) per core:    2
Core(s) per socket:    48
Socket(s):              2
Stepping:              1
Frequency boost:       enabled
CPU(s) scaling MHz:    73%
CPU max MHz:           3810.7910
CPU min MHz:           1500.0000
BogoMIPS:              5491.90
Flags:                 fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
Unknown CPU @ 2.7GHz
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Platform Notes (Continued)

```
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 extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb bpeext
perfctr_llc mwaitx cpb cat_l3 cdp_l3 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
user_shstk avx512_bf16 clzero irperf xsaveerptr rdpru wbnoinvd
amd_ppin cpcp arat npt lbrv svm_lock nrip_save tsc_scale vmcb_clean
flushbyasid decodeassists pausefilter pfthreshold avic
v_omsave_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
debug_swap
```

```
L1d cache: 3 MiB (96 instances)
L1i cache: 3 MiB (96 instances)
L2 cache: 96 MiB (96 instances)
L3 cache: 512 MiB (16 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-11,96-107
NUMA node1 CPU(s): 12-23,108-119
NUMA node2 CPU(s): 24-35,120-131
NUMA node3 CPU(s): 36-47,132-143
NUMA node4 CPU(s): 48-59,144-155
NUMA node5 CPU(s): 60-71,156-167
NUMA node6 CPU(s): 72-83,168-179
NUMA node7 CPU(s): 84-95,180-191
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: Mitigation; Safe RET
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; PBRSE-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	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	512M	16	Unified	3	32768	1	64

8. numactl --hardware

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

```
available: 8 nodes (0-7)
node 0 cpus: 0-11,96-107
node 0 size: 193181 MB
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Platform Notes (Continued)

```

node 0 free: 191766 MB
node 1 cpus: 12-23,108-119
node 1 size: 193527 MB
node 1 free: 193044 MB
node 2 cpus: 24-35,120-131
node 2 size: 193527 MB
node 2 free: 192993 MB
node 3 cpus: 36-47,132-143
node 3 size: 193527 MB
node 3 free: 193045 MB
node 4 cpus: 48-59,144-155
node 4 size: 193527 MB
node 4 free: 192914 MB
node 5 cpus: 60-71,156-167
node 5 size: 193527 MB
node 5 free: 193108 MB
node 6 cpus: 72-83,168-179
node 6 size: 193527 MB
node 6 free: 193085 MB
node 7 cpus: 84-95,180-191
node 7 size: 193476 MB
node 7 free: 192891 MB
node distances:
node  0  1  2  3  4  5  6  7
0:  10 12 12 12 32 32 32 32
1:  12 10 12 12 32 32 32 32
2:  12 12 10 12 32 32 32 32
3:  12 12 12 10 32 32 32 32
4:  32 32 32 32 10 12 12 12
5:  32 32 32 32 12 10 12 12
6:  32 32 32 32 12 12 10 12
7:  32 32 32 32 12 12 12 10

```

```

-----
9. /proc/meminfo
MemTotal:      1584971380 kB

```

```

-----
10. who -r
run-level 3 Feb 8 15:23

```

```

-----
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 appport 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 ua-reboot-cmds ubuntu-advantage udisks2 ufw
unattended-upgrades vgauth
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

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Platform Notes (Continued)

```

indirect      systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy
masked        systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysext
              systemd-time-wait-sync upower
              systemd-sysupdate systemd-sysupdate-reboot uidd
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-6.8.0-52-generic
root=UUID=fac022ef-b566-45fd-8873-d1a5c981c211
ro

```

```

-----
14. cpupower frequency-info
analyzing CPU 128:
  current policy: frequency should be within 1.50 GHz and 2.75 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: 2750MHz

```

```

-----
15. 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
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

```

```

-----
16. /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

```

```

-----
17. /sys/kernel/mm/transparent_hugepage/khugepaged
alloc_sleep_millisecs 60000
defrag                 1
max_ptes_none         511
max_ptes_shared       256

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Platform Notes (Continued)

```
max_ptes_swap          64
pages_to_scan          4096
scan_sleep_millisecs   10000
```

18. OS release
From /etc/*-release /etc/*-version
os-release Ubuntu 24.04.1 LTS

19. Disk information
SPEC is set to: /home/cpu2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/nvme0n1p2 ext4 732G 16G 679G 3% /

20. /sys/devices/virtual/dmi/id
Vendor: Supermicro
Product: H13DSH
Product Family: SMC H13
Serial: TEST123456

21. 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:
24x SK Hynix HMC94MEBRA123N 64 GB 2 rank 4800

22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 3.0a
BIOS Date: 12/06/2024
BIOS Revision: 5.27

Compiler Version Notes

=====
C | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(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++, C, Fortran | 607.cactuBSSN_s(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
AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Compiler Version Notes (Continued)

Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin
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

Fortran | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(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

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

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

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Base Portability Flags (Continued)

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=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP -flto
-fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -mrecip=none -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=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -funroll-loops
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3
-Mrecursive -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=znver5
-fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP -flto
-fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -funroll-loops
-mllvm -lsr-in-nested-loop -Mrecursive -mrecip=none -fopenmp=libomp
-lomp -lamdlibm -lamdalloc -lflang

Benchmarks using Fortran, C, and C++:

-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver5

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):

```
-fveclib=AMDLIBM -ffast-math -fopenmp -DSPEC_OPENMP -flto
-fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt
-mllvm -loop-unswitch-threshold=200000 -mllvm -unroll-threshold=100
-funroll-loops -mllvm -lsr-in-nested-loop -Mrecursive -mrecip=none
-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
```

Peak 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
```



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

619.lbm_s: basepeak = yes

```
638.imagick_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -DSPEC_OPENMP -fremap-arrays -fstrip-mining
-fstruct-layout=9 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -zopt -fopenmp=libomp -lomp
-lamdlibm -lamdalloc -lflang
```

644.nab_s: basepeak = yes

Fortran benchmarks:

```
603.bwaves_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -DSPEC_OPENMP
-Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math
-fopenmp -fscalar-transform -fvector-transform
-mllvm -reduce-array-computations=3 -Mrecursive
-fopenmp=libomp -lomp -lamdlibm -lamdalloc -lflang
```

649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

```
627.cam4_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp
-flto -DSPEC_OPENMP -fremap-arrays -fstrip-mining
-fstruct-layout=9 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

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

Test Date: Feb-2025
Hardware Availability: Nov-2022
Software Availability: Jan-2025

Peak Optimization Flags (Continued)

627.cam4_s (continued):

```
-mllvm -unroll-threshold=50 -zopt -Mrecursive  
-mrecip=none -fopenmp=libomp -lomp -lamdlibm -lamdalloc  
-lflang
```

628.pop2_s: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

```
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-enable-X86-prefetching -Ofast  
-march=znver5 -fveclib=AMDLIBM -ffast-math -fopenmp  
-flto -DSPEC_OPENMP -fremap-arrays -fstrip-mining  
-fstruct-layout=9 -mllvm -inline-threshold=1000  
-mllvm -reduce-array-computations=3  
-mllvm -unroll-threshold=50 -zopt -fscalar-transform  
-fvector-transform -Mrecursive -fopenmp=libomp -lomp  
-lamdlibm -lamdalloc -lflang
```

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

Peak Other Flags

C benchmarks:

```
-Wno-return-type -Wno-unused-command-line-argument
```

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

```
-Wno-return-type -Wno-unused-command-line-argument
```

Benchmarks using Fortran, C, and C++:

```
-Wno-return-type -Wno-unused-command-line-argument
```

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

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

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

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

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

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



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Supermicro

Hyper A+ Server AS -2025HS-TNR
(H13DSH , AMD EPYC 9454)

SPECspeed®2017_fp_base = 352

SPECspeed®2017_fp_peak = 355

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Feb-2025

Hardware Availability: Nov-2022

Software Availability: Jan-2025

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU®2017 v1.1.9 on 2025-02-08 19:32:07-0500.
Report generated on 2025-02-25 19:09:03 by CPU2017 PDF formatter v6716.
Originally published on 2025-02-25.