



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

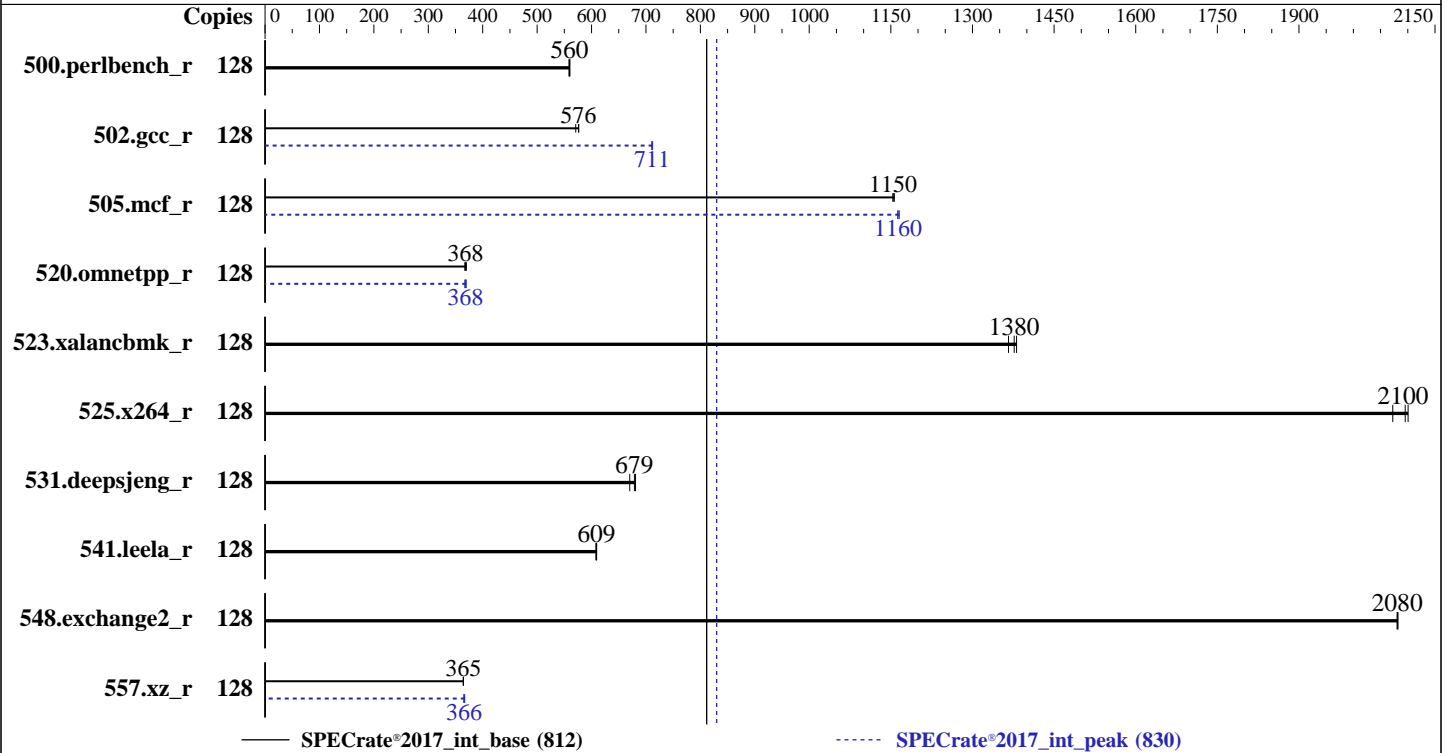
Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

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



### Hardware

CPU Name: AMD EPYC 9555  
 Max MHz: 4400  
 Nominal: 3200  
 Enabled: 64 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: 256 MB I+D on chip per chip, 32 MB shared / 8 cores  
 Other: None  
 Memory: 768 GB (12 x 64 GB 2Rx4 PC5-6400B-R, running at 6000)  
 Storage: 1 x 3.5 TB NVMe SSD  
 Other: CPU Cooling: Air

### Software

OS: Ubuntu 24.04 LTS  
 Kernel 6.8.0-45-generic  
 Compiler: C/C++/Fortran: Version 5.0.0 of AOCC  
 Parallel: No  
 Firmware: Version 1.1 released Sep-2024  
 File System: ext4  
 System State: Run level 5 (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.



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

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

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	128	364	560	365	558	<b>364</b>	<b>560</b>	128	364	560	365	558	<b>364</b>	<b>560</b>
502.gcc_r	128	<b>315</b>	<b>576</b>	317	571	314	576	128	254	712	<b>255</b>	<b>711</b>	255	711
505.mcf_r	128	<b>179</b>	<b>1150</b>	179	1150	179	1160	128	178	1160	177	1170	<b>178</b>	<b>1160</b>
520.omnetpp_r	128	<b>456</b>	<b>368</b>	454	370	458	367	128	454	370	458	367	<b>456</b>	<b>368</b>
523.xalancbmk_r	128	<b>98.2</b>	<b>1380</b>	97.9	1380	98.9	1370	128	<b>98.2</b>	<b>1380</b>	97.9	1380	98.9	1370
525.x264_r	128	108	2070	<b>107</b>	<b>2100</b>	107	2100	128	108	2070	<b>107</b>	<b>2100</b>	107	2100
531.deepsjeng_r	128	219	670	<b>216</b>	<b>679</b>	215	681	128	219	670	<b>216</b>	<b>679</b>	215	681
541.leela_r	128	<b>348</b>	<b>609</b>	348	609	349	608	128	<b>348</b>	<b>609</b>	348	609	349	608
548.exchange2_r	128	161	2080	<b>161</b>	<b>2080</b>	161	2080	128	161	2080	<b>161</b>	<b>2080</b>	161	2080
557.xz_r	128	379	365	<b>379</b>	<b>365</b>	380	364	128	<b>378</b>	<b>366</b>	377	367	379	365

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Environment Variables Notes

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

```
LD_LIBRARY_PATH =
"/spec/cpu2017aocc500znver5_A1/amd_rate_aocc500_znver5_A_lib/lib:/spec/cpu2017aocc500znver5_A1/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

```
Sysinfo program /spec/cpu2017aocc500znver5_A1/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on smc9709turin-u2404os Sat Oct 5 06:50:59 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 255 (255.4-1ubuntu8)
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

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

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

1. uname -a  
Linux smc9709turin-u2404os 6.8.0-45-generic #45-Ubuntu SMP PREEMPT\_DYNAMIC Fri Aug 30 12:02:04 UTC 2024  
x86\_64 x86\_64 x86\_64 GNU/Linux

2. w  
06:50:59 up 26 min, 2 users, load average: 0.42, 0.81, 0.38  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root 172.31.138.80 06:50 26:13 0.00s 0.02s sshd: root@pts/0  
root 172.31.138.80 06:50 26:13 0.00s 0.01s sshd: root@notty

3. Username  
From environment variable \$USER: root

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 3093999  
nofiles 1024  
vmemory(kbytes) unlimited  
locks unlimited  
rtprio 0

5. sysinfo process ancestry  
/sbin/init  
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups  
sshd: root@pts/0  
-bash  
screen -S cpu  
SCREEN -S cpu  
/bin/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/temlogs/preenv.intrate.001.0.log --lognum 001.0 --from\_runcpu 2  
specperl \$SPEC/bin/sysinfo  
\$SPEC = /spec/cpu2017aocc500znver5\_A1

6. /proc/cpuinfo  
model name : AMD EPYC 9555 64-Core Processor  
vendor\_id : AuthenticAMD  
cpu family : 26  
model : 2

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

```
stepping          : 1
microcode         : 0xb002116
bugs              : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size         : 192 4K pages
cpu cores        : 64
siblings         : 128
1 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids 0-63
physical id 0: apicids 0-127
```

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):                128
On-line CPU(s) list:  0-127
Vendor ID:             AuthenticAMD
BIOS Vendor ID:       Advanced Micro Devices, Inc.
Model name:            AMD EPYC 9555 64-Core Processor
BIOS Model name:      AMD EPYC 9555 64-Core Processor
BIOS CPU family:      107
CPU family:           26
Model:                2
Thread(s) per core:   2
Core(s) per socket:   64
Socket(s):            1
Stepping:             1
Frequency boost:      enabled
CPU(s) scaling MHz:   73%
CPU max MHz:          4409.3750
CPU min MHz:          1500.0000
BogoMIPS:             6390.15
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 sse3 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 vnmi
                    avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
                    avx512_vnni avx512_bitalg avx512_vpoptndq la57 rdpid bus_lock_detect
                    movdiri movdir64b overflow_recov succor smca fsrm avx512_vp2intersect
                    flush_lld debug_swap
Virtualization:        AMD-V
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

```

L1d cache:          3 MiB (64 instances)
L1i cache:          2 MiB (64 instances)
L2 cache:           64 MiB (64 instances)
L3 cache:           256 MiB (8 instances)
NUMA node(s):       4
NUMA node0 CPU(s): 0-15,64-79
NUMA node1 CPU(s): 16-31,80-95
NUMA node2 CPU(s): 32-47,96-111
NUMA node3 CPU(s): 48-63,112-127
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:       Not affected
Vulnerability Lltf:                 Not affected
Vulnerability Mds:                  Not affected
Vulnerability Melttdown:            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/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	48K	3M	12	Data	1	64	1	64
L1i	32K	2M	8	Instruction	1	64	1	64
L2	1M	64M	16	Unified	2	1024	1	64
L3	32M	256M	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: 0-15,64-79
node 0 size: 193096 MB
node 0 free: 191719 MB
node 1 cpus: 16-31,80-95
node 1 size: 193481 MB
node 1 free: 192365 MB
node 2 cpus: 32-47,96-111
node 2 size: 193524 MB
node 2 free: 192403 MB
node 3 cpus: 48-63,112-127
node 3 size: 193467 MB
node 3 free: 192381 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: 792136392 kB

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

10. who -r  
run-level 5 Oct 5 06:24

11. Systemd service manager version: systemd 255 (255.4-lubuntu8)  
Default Target Status  
graphical 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 ipmievd 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
generated	openipmi
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-6.8.0-45-generic  
root=UUID=b5be3f8f-1d1a-48e6-804b-c82fd1e321cb  
ro

14. cpupower frequency-info  
analyzing CPU 115:  
current policy: frequency should be within 1.50 GHz and 3.20 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: 12800MHZ

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

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

```

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
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 LTS

```

```

-----
19. Disk information
SPEC is set to: /spec/cpu2017aocc500znver5_A1
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p2 ext4  3.5T  18G  3.3T   1% /

```

```

-----
20. /sys/devices/virtual/dmi/id
Vendor:          Supermicro
Product:         AS -2126HS-TN
Product Family:  SMC H14
Serial:          S920464X4819709

```

```

-----
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:
  12x SK Hynix HMC94AHBRA277N 64 GB 2 rank 6400, configured at 6000

```

```

-----
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      American Megatrends International, LLC.
BIOS Version:     1.1

```

(Continued on next page)





# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

### Platform Notes (Continued)

BIOS Date: 09/09/2024  
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.xalancbmk\_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  
=====

=====  
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  
=====

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Compiler Version Notes (Continued)

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  
-lamdalloc-ext -ldl

C++ benchmarks:

-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-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++
```

Fortran benchmarks:

```
flang
```



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## 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
```

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
-freemap-arrays -fstrip-mining
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

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

**Test Date:** Oct-2024  
**Hardware Availability:** Oct-2024  
**Software Availability:** Oct-2024

## Peak Optimization Flags (Continued)

557.xz\_r (continued):

```
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lflang -lamdalloc-ext -ldl
```

C++ benchmarks:

```
520.omnetpp_r: -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 -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -flto
-mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -zopt -fno-PIE
-no-pie -fvirtual-function-elimination -fvisibility=hidden
-mllvm -do-block-reorder=advanced -lamdlibm -lamdalloc-ext
-ldl
```

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
```



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

## Supermicro

Hyper A+ Server AS -2126HS-TN  
(H14DSH , AMD EPYC 9555)

SPECrate®2017\_int\_base = 812

SPECrate®2017\_int\_peak = 830

**CPU2017 License:** 001176

**Test Sponsor:** Supermicro

**Tested by:** Supermicro

**Test Date:** Oct-2024

**Hardware Availability:** Oct-2024

**Software Availability:** Oct-2024

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-Turin-revB.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-Turin-revB.xml>

SPEC CPU and SPECrate 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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2024-10-05 02:50:59-0400.

Report generated on 2024-10-23 13:33:15 by CPU2017 PDF formatter v6716.

Originally published on 2024-10-23.