



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

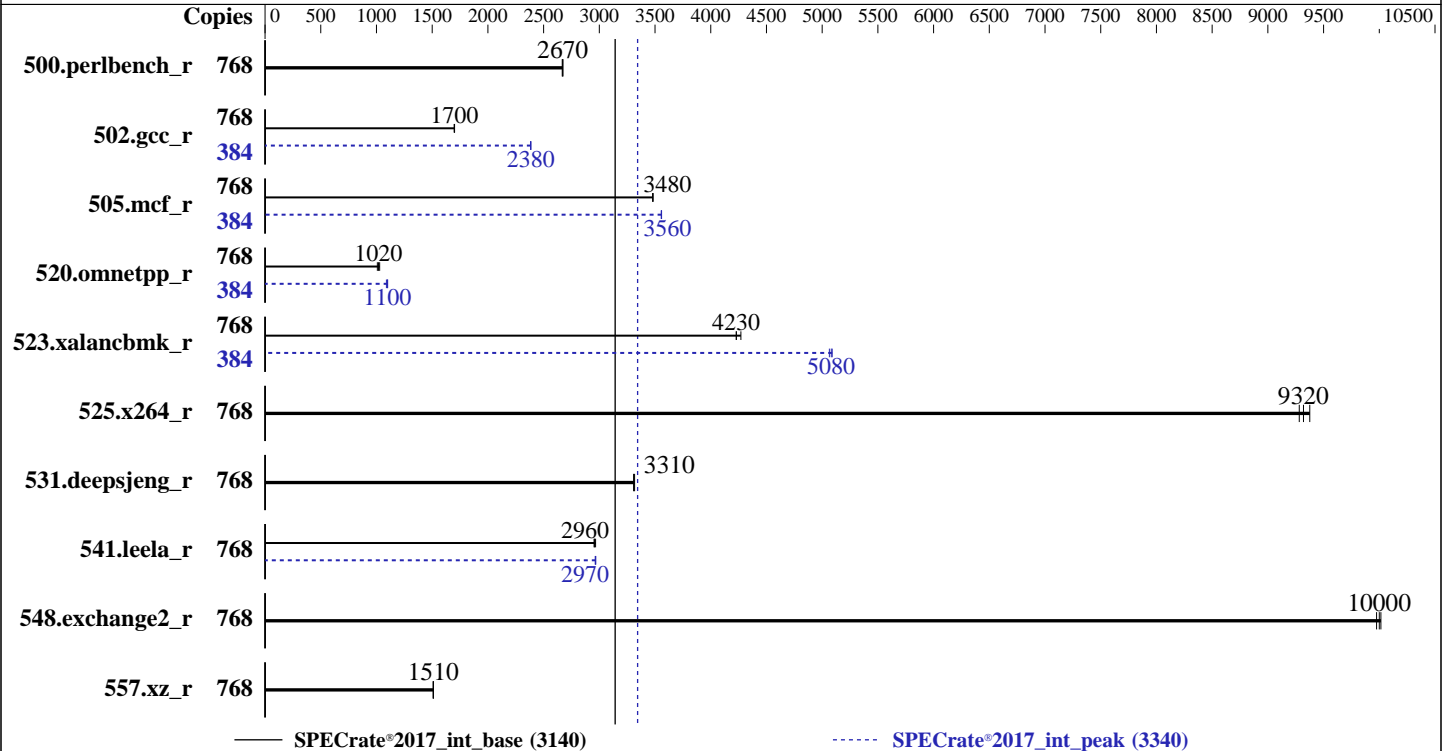
Test Date: Dec-2024

Test Sponsor: IEIT Systems Co., Ltd.

Hardware Availability: Feb-2025

Tested by: IEIT Systems Co., Ltd.

Software Availability: Oct-2024



Hardware

CPU Name: AMD EPYC 9965
 Max MHz: 3700
 Nominal: 2250
 Enabled: 384 cores, 2 chips, 2 threads/core
 Orderable: 1,2 chips
 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 / 16 cores
 Other: None
 Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-6400B-R, running at 6000)
 Storage: 1 x 960 GB NVME SSD
 Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP6 6.4.0-150600.21-default
 Compiler: C/C++/Fortran: Version 5.0.0 of AOCC
 Parallel: No
 Firmware: Version 01.07.00 released Nov-2024
 File System: xfs
 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.



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

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 | 768 | 457 | 2670 | 458 | 2670 | 458 | 2670 | 768 | 457 | 2670 | 458 | 2670 | 458 | 2670 |
| 502.gcc_r | 768 | 640 | 1700 | 641 | 1700 | 639 | 1700 | 384 | 228 | 2390 | 228 | 2380 | 228 | 2380 |
| 505.mcf_r | 768 | 357 | 3480 | 357 | 3480 | 357 | 3480 | 384 | 174 | 3560 | 175 | 3560 | 174 | 3560 |
| 520.omnetpp_r | 768 | 1000 | 1010 | 990 | 1020 | 980 | 1030 | 384 | 458 | 1100 | 463 | 1090 | 459 | 1100 |
| 523.xalancbmk_r | 768 | 192 | 4230 | 190 | 4270 | 192 | 4230 | 384 | 79.8 | 5080 | 80.1 | 5060 | 79.7 | 5090 |
| 525.x264_r | 768 | 143 | 9380 | 144 | 9320 | 145 | 9280 | 768 | 143 | 9380 | 144 | 9320 | 145 | 9280 |
| 531.deepsjeng_r | 768 | 266 | 3310 | 265 | 3320 | 266 | 3310 | 768 | 266 | 3310 | 265 | 3320 | 266 | 3310 |
| 541.leela_r | 768 | 429 | 2970 | 430 | 2960 | 431 | 2950 | 768 | 428 | 2970 | 429 | 2960 | 429 | 2970 |
| 548.exchange2_r | 768 | 201 | 10000 | 202 | 9980 | 201 | 10000 | 768 | 201 | 10000 | 202 | 9980 | 201 | 10000 |
| 557.xz_r | 768 | 550 | 1510 | 549 | 1510 | 549 | 1510 | 768 | 550 | 1510 | 549 | 1510 | 549 | 1510 |

SPECrate®2017_int_base = 3140

SPECrate®2017_int_peak = 3340

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 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

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:"
MALLOCONF = "retain:true"
```

Environment variables set by runcpu during the 523.xalancbmk_r peak run:

```
MALLOCONF = "thp:always"
```

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 configuration:

```
SVM Mode = disable
DRAM Scrub time = disable
NUMA nodes per socket = NPS4
Determinism Slider = Power
cTDP = 500
Package Power Limit = 500
```

```
Sysinfo program /home/CPU2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Wed Dec 25 22:26:07 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 254 (254.10+suse.84.ge8d77af424)
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

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Platform Notes (Continued)

- 19. OS release
- 20. Disk information
- 21. /sys/devices/virtual/dmi/id
- 22. dmidecode
- 23. BIOS

```
1. uname -a
Linux localhost 6.4.0-150600.21-default #1 SMP PREEMPT_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)
x86_64 x86_64 x86_64 GNU/Linux
```

```
2. w
22:26:07 up 2 min, 1 user, load average: 6.29, 8.15, 3.64
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
root      tty1    -             22:24   42.00s  1.24s  0.19s  /bin/bash ./amd_rate_aocc500_znver5_A1.sh
```

```
3. Username
From environment variable $USER: root
```

```
4. ulimit -a
core file size          (blocks, -c) unlimited
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 6186625
max locked memory       (kbytes, -l) 2097152
max memory size         (kbytes, -m) unlimited
open files              (-n) 65535
pipe size               (512 bytes, -p) 8
POSIX message queues    (bytes, -q) 819200
real-time priority      (-r) 0
stack size              (kbytes, -s) unlimited
cpu time                (seconds, -t) unlimited
max user processes      (-u) 6186625
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

```
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=31
login -- root
-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/CPU2017.003/templogs/preenv.intrate.003.0.log --lognum 003.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2017
```

```
6. /proc/cpuinfo
model name      : AMD EPYC 9965 192-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 26
```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Platform Notes (Continued)

```

model          : 17
stepping       : 0
microcode      : 0xb101025
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 192 4K pages
cpu cores     : 192
siblings      : 384
2 physical ids (chips)
768 processors (hardware threads)
physical id 0: core ids 0-191
physical id 1: core ids 0-191
physical id 0: apicids 0-383
physical id 1: apicids 512-895

```

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):                768
On-line CPU(s) list:  0-767
Vendor ID:             AuthenticAMD
BIOS Vendor ID:       Advanced Micro Devices, Inc.
Model name:            AMD EPYC 9965 192-Core Processor
BIOS Model name:      AMD EPYC 9965 192-Core Processor
BIOS CPU family:      107
CPU family:            26
Model:                 17
Thread(s) per core:   2
Core(s) per socket:   192
Socket(s):             2
Stepping:              0
Frequency boost:      enabled
CPU(s) scaling MHz:   61%
CPU max MHz:          3700.1951
CPU min MHz:          1500.0000
BogoMIPS:             4493.13
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 vnmi
avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
avx512_vnni avx512_bitalg avx512_vpopcntdq la57 rdpid bus_lock_detect

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Platform Notes (Continued)

```

Virtualization:
L1d cache:
L1i cache:
L2 cache:
L3 cache:
NUMA node(s):
NUMA node0 CPU(s):
NUMA node1 CPU(s):
NUMA node2 CPU(s):
NUMA node3 CPU(s):
NUMA node4 CPU(s):
NUMA node5 CPU(s):
NUMA node6 CPU(s):
NUMA node7 CPU(s):
Vulnerability Gather data sampling:
Vulnerability Itlb multihit:
Vulnerability Lltf:
Vulnerability Mds:
Vulnerability Meltdown:
Vulnerability Mmio stale data:
Vulnerability Reg file data sampling:
Vulnerability Retbleed:
Vulnerability Spec rstack overflow:
Vulnerability Spec store bypass:
Vulnerability Spectre v1:
Vulnerability Spectre v2:
Vulnerability Srbds:
Vulnerability Tsx async abort:

```

```

movdiri movdir64b overflow_recov succor smca fsrm avx512_vp2intersect
flush_llid debug_swap
AMD-V
18 MiB (384 instances)
12 MiB (384 instances)
384 MiB (384 instances)
768 MiB (24 instances)
8
0-47,384-431
48-95,432-479
96-143,480-527
144-191,528-575
192-239,576-623
240-287,624-671
288-335,672-719
336-383,720-767
Not affected
Not affected
Not affected
Not affected
Not affected
Not affected
Not affected
Not affected
Not affected
Not affected
Mitigation; Speculative Store Bypass disabled via prctl
Mitigation; usercopy/swaps barriers and __user pointer sanitization
always-on; RSB filling; PBRBS-eIBRS Not affected; BHI Not affected
Not affected
Not affected

```

From lscpu --cache:

| NAME | ONE-SIZE | ALL-SIZE | WAYS | TYPE | LEVEL | SETS | PHY-LINE | COHERENCY-SIZE |
|------|----------|----------|------|-------------|-------|-------|----------|----------------|
| L1d | 48K | 18M | 12 | Data | 1 | 64 | 1 | 64 |
| L1i | 32K | 12M | 8 | Instruction | 1 | 64 | 1 | 64 |
| L2 | 1M | 384M | 16 | Unified | 2 | 1024 | 1 | 64 |
| L3 | 32M | 768M | 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: 0-47,384-431
node 0 size: 192774 MB
node 0 free: 191976 MB
node 1 cpus: 48-95,432-479
node 1 size: 193510 MB
node 1 free: 192845 MB
node 2 cpus: 96-143,480-527
node 2 size: 193510 MB
node 2 free: 192847 MB
node 3 cpus: 144-191,528-575
node 3 size: 193510 MB
node 3 free: 192867 MB
node 4 cpus: 192-239,576-623
node 4 size: 193472 MB
node 4 free: 193107 MB
node 5 cpus: 240-287,624-671
node 5 size: 193510 MB

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Platform Notes (Continued)

```

node 5 free: 193185 MB
node 6 cpus: 288-335,672-719
node 6 size: 193510 MB
node 6 free: 193195 MB
node 7 cpus: 336-383,720-767
node 7 size: 192878 MB
node 7 free: 192550 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:      1583801372 kB

```

```

-----
10. who -r
    run-level 3 Dec 25 22:23

```

```

-----
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
    Default Target  Status
    multi-user      running

```

```

-----
12. Services, from systemctl list-unit-files
    STATE          UNIT FILES
    enabled         apparmor auditd cron firewalld getty@ irqbalance issue-generator kbdsettings kdump
                    kdump-early kdump-notify nvme-fc-boot-connections nvme-fc-autoconnect postfix purge-kernels
                    rollback sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6
                    wickedd-nanny
    enabled-runtime systemd-remount-fs
    disabled        boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell ebttables
                    exchange-bmc-os-info fsidd grub2-once haveged hwloc-dump-hwdata ipmievd issue-add-ssh-keys
                    kexec-load nfs nfs-blkmap rpcbind rpmconfigcheck serial-getty@
                    systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysext
                    systemd-time-wait-sync systemd-timesyncd tuned
    generated       jexec
    indirect         systemd-userdbd wickedd

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
    root=UUID=57526b2a-7733-4c34-8e82-bd01bcfc67e9
    splash=silent
    mitigations=auto
    quiet
    security=apparmor
    crashkernel=383M,high
    crashkernel=72M,low

```

```

-----
14. cpupower frequency-info

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Platform Notes (Continued)

analyzing CPU 2:

current policy: frequency should be within 1.50 GHz and 2.25 GHz.
The governor "performance" may decide which speed to use within this range.

boost state support:

Supported: yes

Active: yes

15. tuned-adm active

It seems that tuned daemon is not running, preset profile is not activated.
Preset 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 |
| 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 SUSE Linux Enterprise Server 15 SP6

20. Disk information

SPEC is set to: /home/CPU2017

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Platform Notes (Continued)

| Filesystem | Type | Size | Used | Avail | Use% | Mounted on |
|----------------|------|------|------|-------|------|------------|
| /dev/nvme0n1p3 | xfs | 854G | 36G | 819G | 5% | /home |

```

21. /sys/devices/virtual/dmi/id
Vendor:      IEIT SYSTEMS
Product:     NF5180-A8-A0-R0-00
Product Family: Not specified
Serial:      000000000

```

```

22. dmidecode
Additional information from dmidecode 3.4 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 Samsung M321R8GA0PB2-CCPEC 64 GB 2 rank 6400, configured at 6000

```

```

23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:   American Megatrends International, LLC.
BIOS Version:  01.07.00
BIOS Date:     11/15/2024

```

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)
=====

```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Compiler Version Notes (Continued)

| 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
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

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Base Portability Flags (Continued)

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
-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
```

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Base Other Flags (Continued)

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

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

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Peak Optimization Flags (Continued)

502.gcc_r (continued):

```
-fremap-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 -fremap-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: basepeak = yes

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: -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
-fvirtual-function-elimination -fvisibility=hidden
-mllvm -do-block-reorder=advanced -lamdlibm -lflang
-lamdalloc-ext -ldl
```

531.deepsjeng_r: basepeak = yes

(Continued on next page)



SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017_int_base = 3140

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017_int_peak = 3340

CPU2017 License: 3358

Test Sponsor: IEIT Systems Co., Ltd.

Tested by: IEIT Systems Co., Ltd.

Test Date: Dec-2024

Hardware Availability: Feb-2025

Software Availability: Oct-2024

Peak Optimization Flags (Continued)

```

541.leela_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 -lflang
-lamdalloc-ext -ldl

```

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

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

<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.00.html>

<http://www.spec.org/cpu2017/flags/IEIT-Platform-Settings-amd-V1.0.html>

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

<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.00.xml>

<http://www.spec.org/cpu2017/flags/IEIT-Platform-Settings-amd-V1.0.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.

Tested with SPEC CPU®2017 v1.1.9 on 2024-12-25 22:26:06-0500.

Report generated on 2025-01-28 22:03:48 by CPU2017 PDF formatter v6716.

Originally published on 2025-01-28.