



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

### meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

CPU2017 License: 3358

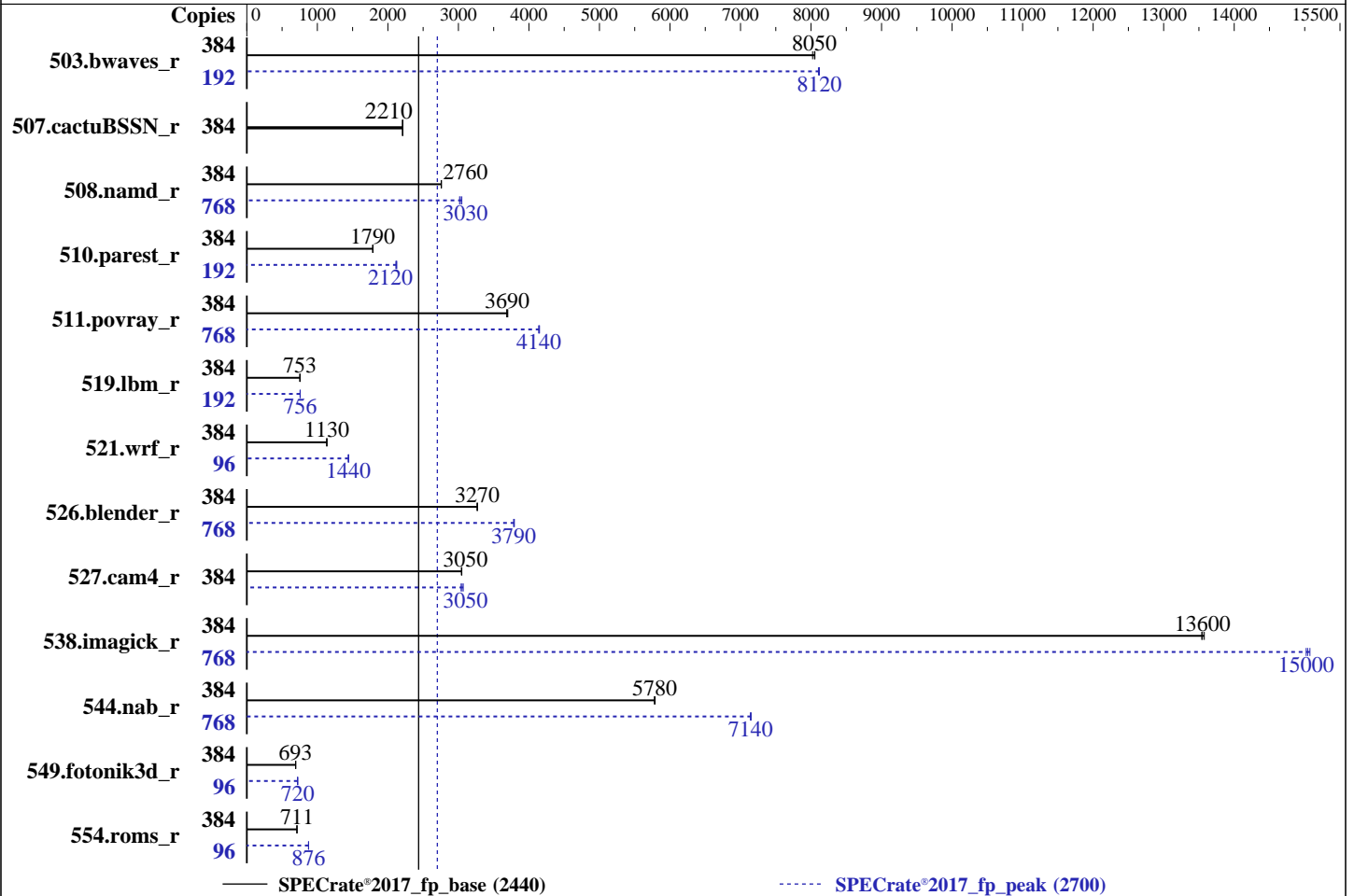
Test Date: Dec-2024

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: 64-bit  
 Other: None  
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage.



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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
503.bwaves_r	384	480	8020	478	8050	<b>478</b>	<b>8050</b>	192	238	8100	237	8120	<b>237</b>	<b>8120</b>
507.cactuBSSN_r	384	<b>220</b>	<b>2210</b>	220	2210	220	2210	384	<b>220</b>	<b>2210</b>	220	2210	220	2210
508.namd_r	384	<b>132</b>	<b>2760</b>	132	2760	132	2760	768	<b>241</b>	<b>3030</b>	239	3050	242	3020
510.parest_r	384	562	1790	<b>562</b>	<b>1790</b>	563	1780	192	<b>237</b>	<b>2120</b>	236	2130	238	2110
511.povray_r	384	<b>243</b>	<b>3690</b>	242	3700	243	3680	768	433	4140	432	4150	<b>433</b>	<b>4140</b>
519.lbm_r	384	537	753	<b>537</b>	<b>753</b>	537	754	192	268	755	<b>268</b>	<b>756</b>	267	757
521.wrf_r	384	759	1130	758	1130	<b>758</b>	<b>1130</b>	96	<b>149</b>	<b>1440</b>	150	1440	149	1440
526.blender_r	384	<b>179</b>	<b>3270</b>	179	3260	179	3270	768	308	3790	309	3780	<b>309</b>	<b>3790</b>
527.cam4_r	384	221	3040	220	3050	<b>220</b>	<b>3050</b>	384	221	3040	<b>220</b>	<b>3050</b>	219	3070
538.imagick_r	384	70.5	13500	<b>70.5</b>	<b>13600</b>	70.3	13600	768	127	15100	127	15000	<b>127</b>	<b>15000</b>
544.nab_r	384	112	5790	112	5780	<b>112</b>	<b>5780</b>	768	181	7140	<b>181</b>	<b>7140</b>	181	7150
549.fotonik3d_r	384	<b>2161</b>	<b>693</b>	2162	692	2159	693	96	519	720	519	721	<b>519</b>	<b>720</b>
554.roms_r	384	858	711	859	710	<b>858</b>	<b>711</b>	96	<b>174</b>	<b>876</b>	174	876	174	874

SPECrate®2017\_fp\_base = 2440

SPECrate®2017\_fp\_peak = 2700

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 Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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:"
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 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 Thu Dec 26 04:43:36 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
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

### meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

**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)

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  
04:43:36 up 6:20, 1 user, load average: 310.01, 633.18, 668.54  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 - 22:24 6:18m 1.42s 0.32s /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 fprate  
runcpu --configfile amd\_rate\_aocc500\_znver5\_A1.cfg --tune all --reportable --iterations 3 --nopower  
--runmode rate --tune base:peak --size test:train:refrate fprate --nopreenv --note-preenv --logfile  
\$SPEC/tmp/CPU2017.004/temlogs/preenv.fprate.004.0.log --lognum 004.0 --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  
model : 17  
stepping : 0  
microcode : 0xb101025

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

**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)

```

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_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 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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

### Platform Notes (Continued)

```

L1d cache: 18 MiB (384 instances)
L1i cache: 12 MiB (384 instances)
L2 cache: 384 MiB (384 instances)
L3 cache: 768 MiB (24 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-47,384-431
NUMA node1 CPU(s): 48-95,432-479
NUMA node2 CPU(s): 96-143,480-527
NUMA node3 CPU(s): 144-191,528-575
NUMA node4 CPU(s): 192-239,576-623
NUMA node5 CPU(s): 240-287,624-671
NUMA node6 CPU(s): 288-335,672-719
NUMA node7 CPU(s): 336-383,720-767
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Reg file data sampling: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec rstack overflow: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS; IBPB conditional; STIBP
always-on; RSB filling; PBR SB-eIBRS Not affected; BHI Not affected
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

```

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	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: 191328 MB
node 1 cpus: 48-95,432-479
node 1 size: 193510 MB
node 1 free: 192158 MB
node 2 cpus: 96-143,480-527
node 2 size: 193510 MB
node 2 free: 192168 MB
node 3 cpus: 144-191,528-575
node 3 size: 193510 MB
node 3 free: 192074 MB
node 4 cpus: 192-239,576-623
node 4 size: 193472 MB
node 4 free: 192167 MB
node 5 cpus: 240-287,624-671
node 5 size: 193510 MB
node 5 free: 192168 MB
node 6 cpus: 288-335,672-719
node 6 size: 193510 MB

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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 6 free: 192206 MB
node 7 cpus: 336-383,720-767
node 7 size: 192878 MB
node 7 free: 191546 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-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
analyzing CPU 26:
current policy: frequency should be within 1.50 GHz and 2.25 GHz.
The governor "performance" may decide which speed to use

```

(Continued on next page)





# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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)

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

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

(Continued on next page)





# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

**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)

```

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 | 519.lbm_r(base, peak) 538.imagick_r(base, peak) 544.nab_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++ | 508.namd_r(base, peak) 510.parest_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++, C | 511.povray_r(base, peak) 526.blender_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
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 | 507.cactuBSSN_r(base, peak)
=====

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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

## Compiler Version Notes (Continued)

```

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
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          | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak) 554.roms_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, C       | 521.wrf_r(base, peak) 527.cam4_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
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

Benchmarks using both Fortran and C:

flang clang

Benchmarks using both C and C++:

clang++ clang

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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

## Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:

clang++ clang flang

## Base Portability Flags

503.bwaves\_r: -DSPEC\_LP64  
 507.cactuBSSN\_r: -DSPEC\_LP64  
 508.namd\_r: -DSPEC\_LP64  
 510.parest\_r: -DSPEC\_LP64  
 511.povray\_r: -DSPEC\_LP64  
 519.lbm\_r: -DSPEC\_LP64  
 521.wrf\_r: -DSPEC\_CASE\_FLAG -Mbyteswapio -DSPEC\_LP64  
 526.blender\_r: -funsigned-char -DSPEC\_LP64  
 527.cam4\_r: -DSPEC\_CASE\_FLAG -DSPEC\_LP64  
 538.imagick\_r: -DSPEC\_LP64  
 544.nab\_r: -DSPEC\_LP64  
 549.fotonik3d\_r: -DSPEC\_LP64  
 554.roms\_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 -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 -lamdalloc  
 -lflang -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,-x86-use-vzeroupper=false -Wl,-mllvm -Wl,-extra-inliner  
 -O3 -march=znver5 -fveclib=AMDLIBM -ffast-math -flto  
 -mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000  
 -mllvm -reduce-array-computations=3 -zopt -lamdlibm -lamdalloc  
 -lflang -ldl

Fortran benchmarks:

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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 Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching
-Wl,-mllvm -Wl,-enable-aggressive-gather=true
-Wl,-mllvm -Wl,-enable-masked-gather-sequence=false -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -flto -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm -lamdalloc
-lflang -ldl
```

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
-Wl,-mllvm -Wl,-enable-aggressive-gather=true
-Wl,-mllvm -Wl,-enable-masked-gather-sequence=false -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 -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -fepilog-vectorization-of-inductions
-lamdlibm -lamdalloc -lflang -ldl
```

Benchmarks using both 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 -Wl,-mllvm -Wl,-extra-inliner
-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 -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000 -lamdlibm -lamdalloc -lflang
-ldl
```

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 -Wl,-mllvm -Wl,-extra-inliner
-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 -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000 -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -fepilog-vectorization-of-inductions
-lamdlibm -lamdalloc -lflang -ldl
```



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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

C benchmarks:

-Wno-unused-command-line-argument

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

Benchmarks using both Fortran and C:

-Wno-unused-command-line-argument

Benchmarks using both C and C++:

-Wno-unused-command-line-argument

Benchmarks using Fortran, C, and C++:

-Wno-unused-command-line-argument

## Peak Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Benchmarks using both Fortran and C:

flang clang

Benchmarks using both C and C++:

clang++ clang

Benchmarks using Fortran, C, and C++:

clang++ clang flang

## Peak Portability Flags

Same as Base Portability Flags



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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

C benchmarks:

```
519.lbm_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -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
-lamdalloc -ldl
```

538.imagick\_r: Same as 519.lbm\_r

```
544.nab_r: -m64 -flto -Wl,-mllvm -Wl,-ldist-scalar-expand
-fenable-aggressive-gather -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 -lamdlibm
-lamdalloc -ldl
```

C++ benchmarks:

```
508.namd_r: -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 -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -flto
-mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lamdalloc -ldl
```

```
510.parest_r: -m64 -std=c++14 -flto -Wl,-mllvm -Wl,-suppress-fmas
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math
-mllvm -unroll-threshold=100
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lamdalloc -ldl
```

Fortran benchmarks:

```
503.bwaves_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver5 -fveclib=AMDLIBM -ffast-math -flto
-Mrecursive -mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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)

503.bwaves\_r (continued):

-lamdalloc -ldl -lflang

549.fotonik3d\_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast  
-march=znver5 -fveclib=AMDLIBM -ffast-math -flto  
-Mrecursive -mllvm -reduce-array-computations=3  
-fepilog-vectorization-of-inductions -fvector-transform  
-fscalar-transform -lamdlibm -lamdalloc -ldl -lflang

554.roms\_r: Same as 503.bwaves\_r

Benchmarks using both Fortran and C:

521.wrf\_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

-Wl,-mllvm -Wl,-reduce-array-computations=3 -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 -Mrecursive  
-funroll-loops -mllvm -lsr-in-nested-loop  
-fepilog-vectorization-of-inductions -lamdlibm -lamdalloc  
-ldl -lflang

527.cam4\_r: -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 -flto  
-fstruct-layout=7 -mllvm -unroll-threshold=50  
-mllvm -inline-threshold=1000 -fremap-arrays  
-mllvm -reduce-array-computations=3 -zopt -Mrecursive  
-funroll-loops -mllvm -lsr-in-nested-loop  
-fepilog-vectorization-of-inductions -lamdlibm -lamdalloc  
-ldl -lflang

Benchmarks using both C and C++:

511.povray\_r: -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  
-Wl,-mllvm -Wl,-extra-inliner -Ofast -march=znver5  
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=7  
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000  
-fremap-arrays -mllvm -reduce-array-computations=3 -zopt

(Continued on next page)





# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

IEIT Systems Co., Ltd.

SPECrate®2017\_fp\_base = 2440

meta brain NF5180G8 (AMD EPYC 9965)

SPECrate®2017\_fp\_peak = 2700

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)

511.povray\_r (continued):

```
-mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000 -lamdlibm
-lamdalloc -ldl
```

526.blender\_r: -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 -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
-mllvm -unroll-threshold=100 -lamdlibm -lamdalloc -ldl
```

Benchmarks using Fortran, C, and C++:

507.cactuBSSN\_r: basepeak = yes

## Peak Other Flags

C benchmarks:

-Wno-unused-command-line-argument

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

Benchmarks using both Fortran and C:

-Wno-unused-command-line-argument

Benchmarks using both C and C++:

-Wno-unused-command-line-argument

Benchmarks using Fortran, C, and C++:

-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>



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

**IEIT Systems Co., Ltd.**

**SPECrate®2017\_fp\_base = 2440**

**meta brain NF5180G8 (AMD EPYC 9965)**

**SPECrate®2017\_fp\_peak = 2700**

**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

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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2024-12-26 04:43:35-0500.

Report generated on 2025-01-28 22:04:08 by CPU2017 PDF formatter v6716.

Originally published on 2025-01-28.