



SPEC CPU®2026 Floating Point Speed Result

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GIGA-BYTE TECHNOLOGY CO., LTD.
(Test Sponsor: Ampere Computing, Inc.)
R2A3-T40-AAV1
(3.20 GHz AmpereOneM A192-32M)

SPECSpeed®2026_fp_base = 5.59
SPECSpeed®2026_fp_energy_base = 2.58
SPECSpeed®2026_fp_peak = 5.69
SPECSpeed®2026_fp_energy_peak = 2.62

CPU2026 License: 6412

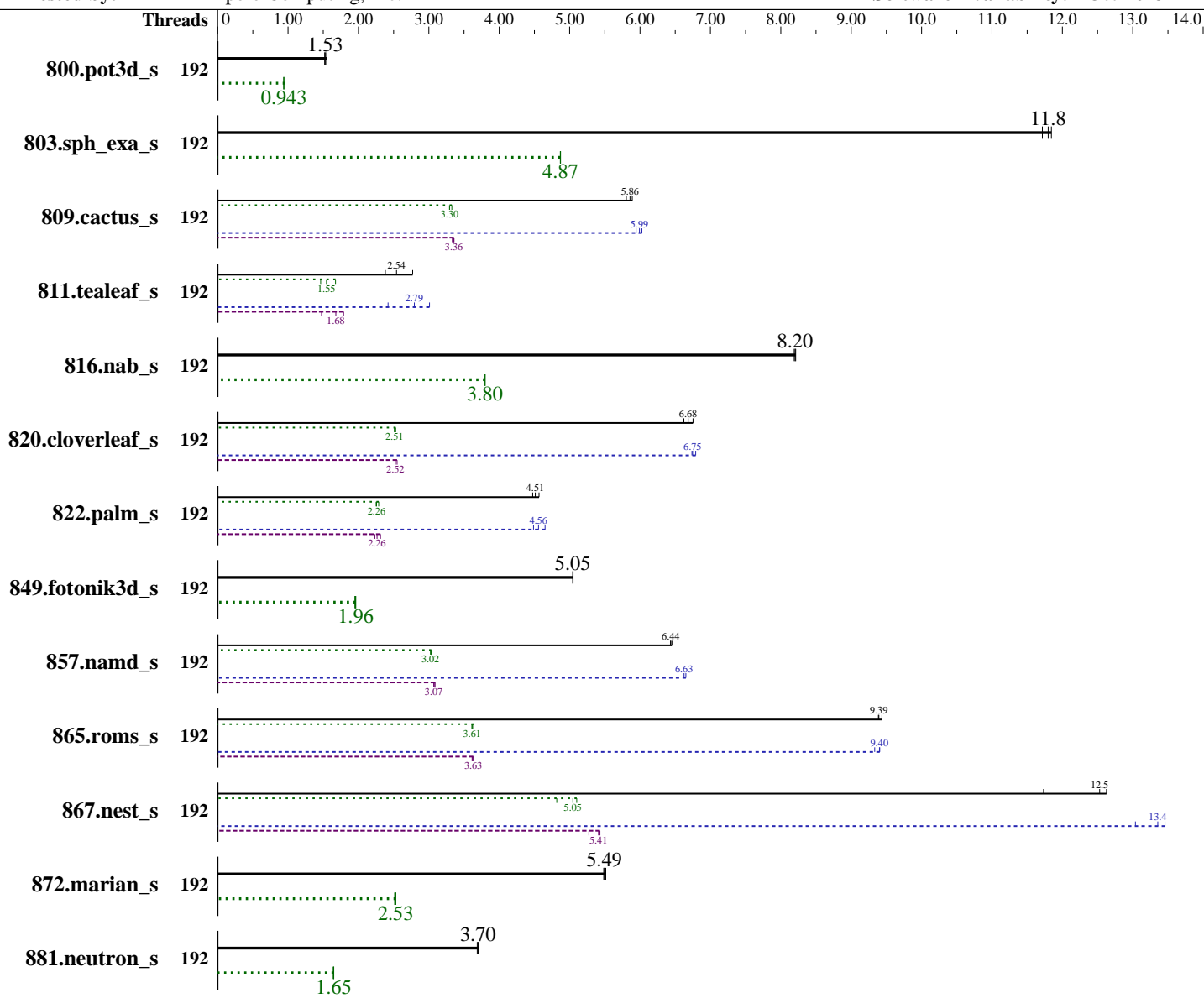
Test Sponsor: Ampere Computing, Inc.

Tested by: Ampere Computing, Inc.

Test Date: Feb-2026

Hardware Availability: Nov-2025

Software Availability: Oct-2025



Hardware

CPU Name: AmpereOneM A192-32M
Max MHz: 3200
Nominal: 3200
Enabled: 192 cores, 1 chip
Orderable: 1 chip

(Continued on next page)

Software

OS: Fedora Linux 43 (Server Edition)
6.17.5-200.64K_PS.fc42.aarch64
Compiler: C/C++/Fortran: Version 15.2.0 of GCC
Compiler Category: Community
Firmware: Version 5.4.5.1 released Oct-2025

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Hardware (Continued)

Cache L1: 16 KB I + 64 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 64 MB I+D on chip per chip
Other: None
Memory: 768 GB (12 x 64 GB 2Rx4 PC5-5600B-R)
Storage: 1 x 960 GB Samsung M.2 (MZ1L2960HCJR-00A07)
Cooling: Air
Other: None

Software (Continued)

File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: Jemalloc memory allocator library v5.3.0
Power Management: OS CPU governor set to "performance"

Power

Max. Power (W): 652.6
Idle Power (W): 200.2
Min. Temperature (C): 20.56
Elevation (m): 60
Line Standard: 120 V / 60 Hz / 1 phase / 2 wire
Provisioning: Line powered

Power Settings

Management FW: Version 4.06 of MegaRAC BMC
Memory Mode: Normal

Power-Relevant Hardware

Power Supply: 1 x 1600 W (non-redundant)
Details: 1+1 1600W 80 PLUS Titanium redundant power supplies
AC Power Supply
Backplane: PCIe Gen5 x4
Other Storage: Embedded SATA Controller
Storage Model #: R2A3-T40-AAV1
NICs Installed: 1 x Mellanox Technologies MT27710 Family @ 25 GbE (2 ports ethernet)
NICs Enabled (FW/OS): 2 / 1
NICs Connected/Speed: 1 @ 25 Gbps
Other HW Model #: Fan configuration is 4 x 80x80x38mm

Power Analyzer

Power Analyzer: cpu-reference-ptd:8000
Hardware Vendor: Yokogawa
Model: WT-310
Serial Number: T11733285
Input Connection: Serial over USB
Metrology Institute: NIST
Calibration By: Yokogawa USA
Calibration Label: T126622
Calibration Date: 13-Aug-2025
PTDaemon® Version: 1.11.3 (0c074d7d; 2025-10-15)
Setup Description: Directly Connected to PSU 1
Current Ranges Used: 10A
Voltage Range Used: 150V

Temperature Meter

Temperature Meter: cpu-reference-ptd:9000
Hardware Vendor: PCSensor
Model: USB9097+DS18B20
Serial Number: N/A
Input Connection: USB
PTDaemon Version: 1.11.3 (0c074d7d; 2025-10-15)
Setup Description: In front of SUT front panel primary air inlet



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Base Results Table

Benchmark	Threads	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power
800.pot3d_s	192	443	1.52	135	0.937	304	307	440	1.53	134	0.943	304	307	435	1.55	132	0.956	304	306
803.sph_exa_s	192	105	11.8	43.0	4.87	410	543	106	11.7	43.0	4.87	407	538	105	11.8	43.0	4.87	411	528
809.cactus_s	192	190	5.89	60.9	3.33	320	351	192	5.86	61.4	3.30	321	353	193	5.81	61.9	3.27	320	355
811.tealeaf_s	192	201	2.77	83.4	1.67	415	563	219	2.54	90.3	1.55	412	552	234	2.38	95.4	1.46	408	550
816.nab_s	192	137	8.19	51.0	3.79	371	395	137	8.20	50.9	3.80	370	396	137	8.21	50.8	3.80	371	394
820.cloverleaf_s	192	128	6.68	66.3	2.51	517	550	127	6.75	65.8	2.53	519	553	129	6.62	66.2	2.51	512	539
822.palm_s	192	272	4.51	91.9	2.26	338	473	269	4.57	90.7	2.29	337	490	274	4.48	92.1	2.25	336	465
849.fotonik3d_s	192	131	5.04	62.9	1.96	481	505	131	5.05	62.8	1.96	480	504	131	5.05	63.2	1.95	484	506
857.namd_s	192	225	6.45	87.5	3.04	389	481	226	6.43	87.7	3.03	389	483	226	6.44	87.9	3.02	390	483
865.roms_s	192	116	9.44	63.7	3.64	551	577	116	9.39	64.1	3.61	552	577	116	9.39	64.1	3.61	552	578
867.nest_s	192	184	11.7	80.3	4.82	436	653	172	12.5	76.6	5.05	444	643	171	12.6	75.8	5.10	443	637
872.marian_s	192	197	5.48	64.2	2.51	325	574	196	5.51	63.7	2.53	325	575	197	5.49	63.8	2.53	324	563
881.neutron_s	192	220	3.70	79.8	1.65	362	553	221	3.69	80.2	1.64	363	555	220	3.71	79.9	1.65	363	556

SPECSpeed®2026_fp_base = 5.59

SPECSpeed®2026_fp_energy_base = 2.58

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Peak Results Table

Benchmark	Threads	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power	Seconds	Ratio	Energy (kJ)	Energy Ratio	Average Power	Maximum Power
800.pot3d_s	192	443	1.52	135	0.937	304	307	440	1.53	134	0.943	304	307	435	1.55	132	0.956	304	306
803.sph_exa_s	192	105	11.8	43.0	4.87	410	543	106	11.7	43.0	4.87	407	538	105	11.8	43.0	4.87	411	528
809.cactus_s	192	189	5.94	60.7	3.33	322	356	186	6.03	60.3	3.36	324	355	187	5.99	60.3	3.36	322	356
811.tealeaf_s	192	199	2.79	83.2	1.68	417	580	230	2.42	94.6	1.48	411	560	185	3.01	78.1	1.79	422	577
816.nab_s	192	137	8.19	51.0	3.79	371	395	137	8.20	50.9	3.80	370	396	137	8.21	50.8	3.80	371	394
820.cloverleaf_s	192	126	6.79	65.3	2.55	518	540	127	6.75	66.0	2.52	519	550	127	6.74	66.1	2.52	519	551
822.palm_s	192	269	4.56	91.6	2.26	340	494	264	4.65	89.7	2.31	340	477	274	4.49	92.9	2.23	339	504
849.fotonik3d_s	192	131	5.04	62.9	1.96	481	505	131	5.05	62.8	1.96	480	504	131	5.05	63.2	1.95	484	506
857.namd_s	192	220	6.61	86.4	3.08	393	490	219	6.63	86.5	3.07	395	488	218	6.65	86.0	3.09	394	490
865.roms_s	192	117	9.33	63.9	3.62	547	574	116	9.41	64.0	3.61	553	577	116	9.40	63.8	3.63	550	573
867.nest_s	192	162	13.4	71.5	5.41	442	651	161	13.5	71.2	5.43	444	633	166	13.0	73.3	5.27	443	643
872.marian_s	192	197	5.48	64.2	2.51	325	574	196	5.51	63.7	2.53	325	575	197	5.49	63.8	2.53	324	563
881.neutron_s	192	220	3.70	79.8	1.65	362	553	221	3.69	80.2	1.64	363	555	220	3.71	79.9	1.65	363	556

SPECSpeed®2026_fp_peak = 5.69

SPECSpeed®2026_fp_energy_peak = 2.62

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Compiler Notes

Binaries were compiled on a system with 1x AmpereOneM CPU chip + 768 GB Memory using Fedora Linux 42

Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size
Set dirty_ratio=8 to limit dirty cache to 8% of memory
echo 8 | sudo tee /proc/sys/vm/dirty_ratio
Set swappiness=1 to swap only if necessary
```

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Operating System Notes (Continued)

```
echo 1 | sudo tee /proc/sys/vm/swappiness
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory
echo 1 | sudo tee /proc/sys/vm/zone_reclaim_mode
Set drop_caches=3 to reset caches before invoking runcpu
echo 3 | sudo tee /proc/sys/vm/drop_caches
Set numa_balancing=0 to disable automatic numa balancing
echo 0 | sudo tee /proc/sys/kernel/numa_balancing
Switch off all ktune and tuned settings
sudo tuned-adm off
Transparent huge pages set to 'never'
sudo bash -c "echo never > /sys/kernel/mm/transparent_hugepage/enabled"

runcpu command invoked through numactl i.e.
numactl --interleave=all runcpu <etc>
```

Environment Variables Notes

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

```
LD_LIBRARY_PATH =
"/home/amptest/workspace/sir2026_pkg_verify/ampere_spec2026/spec2026/jemalloc/install/lib:/home/amptest/workspace/sir2026_pkg_verify/ampere_spec2026/spec2026/gcc/install/lib64:/home/amptest/ampere_spec2026/spec2026/jemalloc/install/lib:/home/amptest/ampere_spec2026/spec2026/gcc/install/lib64"
MALLOCONF = "thp:never,dirty_decay_ms:-1,muzzy_decay_ms:-1,retain:true"
OMP_STACKSIZE = "120M"
```

General Notes

Jemalloc v5.3.0 is available via <https://github.com/jemalloc/jemalloc/releases/download/5.3.0/jemalloc-5.3.0.tar.bz2>
It was built on Fedora Linux 42 using Version 15.2.0 of GCC
The configure options are
"--with-lg-page=16" for building libjemalloc.so, and
"--with-lg-quantum=3 --with-lg-page=16" for building libjemalloc_ext.so
Tuned MALLOCONF in terms of <https://jemalloc.net/jemalloc.3.html>

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)

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General Notes (Continued)

is mitigated in the system as tested and documented.

Platform Notes

Note: lscpu is not able to detect the SLC.
SLC is defined at <https://developer.arm.com/documentation/100180/0103/bry1436285730281>

Sysinfo program /home/ampctest/workspace/sir2026_pkg_verify/ampere_spec2026/spec2026/bin/sysinfo
Rev: 069f95da7e7f5d81b2ce48a82150e54f
running on ampereone Thu Feb 5 20:38:32 2026

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

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- 1. uname -srvm
- 2. w
- 3. Username
- 4. ulimit -a
- 5. sysinfo process ancestry
- 6. /proc/cpuinfo
- 7. lscpu
- 8. numactl --hardware
- 9. /proc/meminfo
- 10. Systemd service manager version: systemd 258 (258-1.fc43)
- 11. Services, from systemctl list-unit-files
- 12. Linux kernel boot-time arguments, from /proc/cmdline
- 13. cpupower frequency-info
- 14. tuned-adm active
- 15. sysctl
- 16. /sys/kernel/mm/transparent_hugepage
- 17. /sys/kernel/mm/transparent_hugepage/khugepaged
- 18. OS release
- 19. Disk information
- 20. /sys/devices/virtual/dmi/id
- 21. dmidecode
- 22. BIOS

1. uname -srvm
Linux 6.17.5-200.64K_PS.fc42.aarch64 #1 SMP PREEMPT_DYNAMIC Wed Jan 21 08:54:52 EST 2026 aarch64

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Platform Notes (Continued)

2. w
20:38:32 up 6:46, 2 users, load average: 103.83, 40.91, 32.69
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
amptest 13:52 6:46m 0.00s 0.02s sshd-session: amptest [priv]
amptest 13:52 6:46m 0.00s 0.21s /usr/lib/systemd/systemd --user

3. Username
From environment variable \$USER: root
From the command 'logname': amptest

4. ulimit -a
real-time non-blocking time (microseconds, -R) unlimited
core file size (blocks, -c) 0
data seg size (kbytes, -d) unlimited
scheduling priority (-e) 0
file size (blocks, -f) unlimited
pending signals (-i) 784608
max locked memory (kbytes, -l) 8192
max memory size (kbytes, -m) unlimited
open files (-n) 524288
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) 784608
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=57
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd-session: amptest [priv]
sshd-session: amptest@notty
java -jar remoting.jar -workDir /home/amptest -jar-cache /home/amptest/remoting/jarCache
/bin/bash /tmp/jenkins17214592009497033566.sh
sudo -S -E UPDATE_UTIL=false /home/amptest/util/jenkins/speccpu_pkg_verify.sh
GreenSIR2026/without_report/spec2026_fpspeed_gcc15_ofast_static_ampereonem_power_112.tgz
/bin/bash /home/amptest/util/jenkins/speccpu_pkg_verify.sh
GreenSIR2026/without_report/spec2026_fpspeed_gcc15_ofast_static_ampereonem_power_112.tgz
/bin/bash /home/amptest/workspace/sir2026_pkg_verify/ampere_spec2026/run_spec2026.sh --iterations 3

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Platform Notes (Continued)

```
--nobuild --action run --threads 192 --reportable --tune=base,peak fpspeed
runcpu --config=ampere_aarch64 --define numasize=192 --define
gcc_dir=/home/amptest/ampere_spec2026/spec2026/gcc/install --define
llvm_dir=/home/amptest/ampere_spec2026/spec2026/llvm/install --define
jemalloc_dir=/home/amptest/ampere_spec2026/spec2026/jemalloc/install --define glibc_dir=/ --iterations 3
--nobuild --action run --threads 192 --reportable --tune=base,peak fpspeed
runcpu --configfile ampere_aarch64 --define numasize=192 --define
gcc_dir=/home/amptest/ampere_spec2026/spec2026/gcc/install --define
llvm_dir=/home/amptest/ampere_spec2026/spec2026/llvm/install --define
jemalloc_dir=/home/amptest/ampere_spec2026/spec2026/jemalloc/install --define glibc_dir=/ --iterations 3
--nobuild --action run --threads 192 --reportable --tune base,peak --runmode speed --tune base:peak --size
refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2026.003/templogs/preenv.fpspeed.003.0.log --lognum 003.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo -f
$SPEC = /home/amptest/workspace/sir2026_pkg_verify/ampere_spec2026/spec2026
```

```
-----
6. /proc/cpuinfo
CPU implementer : 0xc0
CPU architecture: 8
CPU variant : 0x0
CPU part : 0xac4
CPU revision : 0

Features : fp asimd evtstrm aes pmull sha1 sha2 crc32 atomics fphp asimdhp cpuid asimdrdm jscvt
fcma lrcpc dcpop sha3 sm3 sm4 asimddp sha512 asimdfhm dit uscat ilrcpc flagm ssbs sb
paca pacg dcpodp flagm2 frint i8mm bfl16 rng bti ecv
```

7. lscpu

From lscpu from util-linux 2.41.3:

```
Architecture: aarch64
CPU op-mode(s): 64-bit
Byte Order: Little Endian
CPU(s): 192
On-line CPU(s) list: 0-191
Vendor ID: Ampere
BIOS Vendor ID: Ampere (R)
Model name: Ampere-1a
BIOS Model name: AmpereOne (R) A192-32M CPU @ 3.2GHz
BIOS CPU family: 257
Model: 0
Thread(s) per core: 1
Core(s) per socket: 192
Socket(s): 1
```

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Platform Notes (Continued)

```
Stepping: 0x0
Frequency boost: disabled
CPU(s) scaling MHz: 100%
CPU max MHz: 3200.0000
CPU min MHz: 1000.0000
BogoMIPS: 2000.00
Flags: fp asimd evtstrm aes pmull sha1 sha2 crc32 atomics fphp asimdhp
      cpuid asimdrdm jscvt fcmu lrcpc dcpop sha3 sm3 sm4 asimdtp sha512
      asimdfhm dit uscat ilrcpc flagm ssbs sb paca pacg dcpodp flagm2
      frint i8mm bf16 rng bti ecv
Lld cache: 12 MiB (192 instances)
Lli cache: 3 MiB (192 instances)
L2 cache: 384 MiB (192 instances)
NUMA node(s): 1
NUMA node0 CPU(s): 0-191
Vulnerability Gather data sampling: Not affected
Vulnerability Ghostwrite: Not affected
Vulnerability Indirect target selection: 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 Old microcode: 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; __user pointer sanitization
Vulnerability Spectre v2: Not affected
Vulnerability Srbds: Not affected
Vulnerability Tsa: Not affected
Vulnerability Tsx async abort: Not affected
Vulnerability Vmscape: Not affected
```

```
From lscpu --cache:
NAME ONE-SIZE ALL-SIZE WAYS TYPE LEVEL SETS PHY-LINE COHERENCY-SIZE
Lld 64K 12M 4 Data 1 256 64
Lli 16K 3M 4 Instruction 1 64 64
L2 2M 384M 8 Unified 2 4096 64
```

```
-----
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
available: 1 nodes (0)
```

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SPECspeed®2026_fp_energy_peak = 2.62

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Tested by: Ampere Computing, Inc.

Test Date: Feb-2026
Hardware Availability: Nov-2025
Software Availability: Oct-2025

Platform Notes (Continued)

```
node 0 cpus: 0-191
node 0 size: 784583 MB
node 0 free: 774508 MB
node distances:
node      0
0:      10
```

9. /proc/meminfo
MemTotal: 803413888 kB

'who -r' did not return a run level

10. Systemd service manager version: systemd 258 (258-1.fc43)
Default Target Status
multi-user running

11. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager NetworkManager NetworkManager-dispatcher abrt-journal-core abrt-oops abrt-vmcore abrt-xorg abrttd atd audit-rules auditd authselect-apply-changes bluetooth crond dbus-broker fips-crypto-policy-overlay firewalld getty@ irqbalance iscsi-onboot iscsi-starter lm_sensors lvm2-monitor mdmonitor multipathd rpmdb-rebuild rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd systemd-boot-clear-sysfail systemd-confext systemd-resolved systemd-sysextd systemd-tpm2-clear tuned udisks2 upower
enabled-runtime	systemd-remount-fs
disabled	NetworkManager-wait-online abrt-pstoreoops arp-ethers blk-availability canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot chrony-wait chronyd chronyd-restricted console-getty containerd cpupower debug-shell dnf-system-upgrade dnf5-offline-transaction dnsmasq docker fancontrol fsidd gssproxy iscsi-init iscsid iscsiuiio kvm_stat lastlog2-import low-memory-monitor lvm-devices-import man-db-restart-cache-update netavark-dhcp-proxy netavark-firewalld-reload netavark-nftables-reload nfs-blkmap nfs-server nftables nis-domainname nvme-fc-boot-connections nvme-fc-autoconnect openhpid podman podman-auto-update podman-clean-transient podman-kube@ podman-restart psacct rmtfs rpcbind selinux-check-proper-disable ssh-host-keys-migration sshd-keygen@ svnservice systemd-boot-check-no-failures systemd-boot-update systemd-homed systemd-homed-activate systemd-homed-firstboot systemd-network-generator systemd-oom 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-pstore systemd-time-wait-sync systemd-timesyncd systemd-udev-load-credentials systemd-userdb-load-credentials wpa_supplicant zvbid
indirect	iscsi pcsd serial-getty@ sshd@ sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh

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R2A3-T40-AAV1
(3.20 GHz AmpereOneM A192-32M)

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SPECSpeed®2026_fp_energy_base = 2.58
SPECSpeed®2026_fp_peak = 5.69
SPECSpeed®2026_fp_energy_peak = 2.62

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Platform Notes (Continued)

sssd-sudo systemd-sysupdate systemd-sysupdate-reboot systemd-userdbd

12. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd5,gpt2)/vmlinuz-6.17.5-200.64K_PS.fc42.aarch64
root=/dev/mapper/fedora-root
ro
rd.lvm.lv=fedora/root
nokaslr
kaslr.disabled=1

13. cpupower frequency-info
analyzing CPU 20:
current policy: frequency should be within 1000 MHz and 3.20 GHz.
The governor "performance" may decide which speed to use
within this range.

14. tuned-adm active
No current active profile.

15. sysctl
kernel.numa_balancing 0
kernel.randomize_va_space 2
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

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Platform Notes (Continued)

16. /sys/kernel/mm/transparent_hugepage
defrag always defer defer+madvise madvise [never]
enabled always madvise [never]
hpage_pmd_size 536870912
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 8191
max_ptes_shared 4096
max_ptes_swap 1024
pages_to_scan 65536
scan_sleep_millisecs 10000

18. OS release
From /etc/*-release /etc/*-version
os-release Fedora Linux 43 (Server Edition)
fedora-release Fedora release 43 (Forty Three)
redhat-release Fedora release 43 (Forty Three)
system-release Fedora release 43 (Forty Three)

19. Disk information
SPEC is set to: /home/amptest/workspace/sir2026_pkg_verify/ampere_spec2026/spec2026
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/fedora-root xfs 891G 258G 634G 29% /

20. /sys/devices/virtual/dmi/id
Vendor: GIGACOMPUTING
Product: R2A3-T40-AAV1
Product Family: R2A3-T40-AAV1
Serial: 00000000000000000000000000000001

21. dmidecode
Additional information from dmidecode 3.6 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 Micron Technology MTC40F2046S1RC56BD2 MLCC 64 GB 2 rank 5600

(Continued on next page)



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Platform Notes (Continued)

22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: Ampere Computing LLC
BIOS Version: 5.4.5.1
BIOS Date: 10/22/2025
BIOS Revision: 5.37

Compiler Version Notes

=====
C | 811.tealeaf_s(base, peak) 816.nab_s(base, peak) 881.neutron_s(base, peak)

gcc (GCC) 15.2.0
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=====
C++ | 803.sph_exa_s(base, peak) 857.namd_s(base, peak) 867.nest_s(base, peak) 872.marian_s(base, peak)

g++ (GCC) 15.2.0
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=====
C++, C | 809.cactus_s(base pass 0, peak pass 1, peak pass 2)

g++ (GCC) 15.2.0
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=====
C++, C | 809.cactus_s(base pass 0, peak pass 1, peak pass 2)

(Continued on next page)



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Compiler Version Notes (Continued)

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=====
C++, C | 809.cactus_s(base pass 0, peak pass 1, peak pass 2)

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C++, C | 809.cactus_s(base pass 0, peak pass 1, peak pass 2)

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=====
Fortran | 800.pot3d_s(base, peak) 820.cloverleaf_s(base, peak)
| 822.palm_s(base, peak) 849.fotonik3d_s(base, peak) 865.roms_s(base,
peak)

GNU Fortran (GCC) 15.2.0
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Base Compiler Invocation

C benchmarks:
gcc

C++ benchmarks:
g++

(Continued on next page)



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Test Date: Feb-2026
Hardware Availability: Nov-2025
Software Availability: Oct-2025

Base Compiler Invocation (Continued)

Fortran benchmarks:
gfortran

Benchmarks using both C and C++:
g++ gcc

Base Portability Flags

800.pot3d_s: -DSPEC_SUPPRESS_LOCAL_AND_REDUCE
867.nest_s: -fno-finite-math-only

Base Optimization Flags

C benchmarks:
-mabi=lp64 -std=c18 -Wl,-allow-multiple-definition -static
-fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib -g -Ofast
-mcpu=amperela -flto=32 -funroll-loops --param early-inlining-insns=96
--param max-inline-insns-auto=64 --param inline-unit-growth=96 -fopenmp
-DSPEC_OPENMP -u malloc -ljemalloc

C++ benchmarks:

803.sph_exa_s: -mabi=lp64 -std=c++17 -Wl,-allow-multiple-definition
-static -fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-g -Ofast -mcpu=amperela -flto=32 -funroll-loops
--param early-inlining-insns=256
--param max-inline-insns-auto=128
--param inline-unit-growth=256 -ffinite-loops -fopenmp
-DSPEC_OPENMP -u malloc -ljemalloc_ext

857.namd_s: Same as 803.sph_exa_s

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SPECspeed®2026_fp_energy_peak = 2.62

CPU2026 License: 6412
Test Sponsor: Ampere Computing, Inc.
Tested by: Ampere Computing, Inc.

Test Date: Feb-2026
Hardware Availability: Nov-2025
Software Availability: Oct-2025

Base Optimization Flags (Continued)

867.nest_s: Same as 803.sph_exa_s

```
872.marian_s: -mabi=lp64 -std=c++17 -Wl,-allow-multiple-definition
-static -fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-g -Ofast -mcpu=ampere1a -flto=32 -funroll-loops
--param early-inlining-insns=256
--param max-inline-insns-auto=128
--param inline-unit-growth=256 -ffinite-loops -pthread
-u malloc -ljemalloc_ext
```

Fortran benchmarks:

```
800.pot3d_s: -mabi=lp64 -std=f2008 -Wl,-allow-multiple-definition
-static -fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-g -Ofast -mcpu=ampere1a -flto=32 -funroll-loops
-fallow-argument-mismatch -ftree-parallelize-loops=16
-u malloc -ljemalloc
```

```
820.cloverleaf_s: -mabi=lp64 -std=f2008 -Wl,-allow-multiple-definition
-static -fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-g -Ofast -mcpu=ampere1a -flto=32 -funroll-loops
-fallow-argument-mismatch -DSPEC_OPENMP -fopenmp
-u malloc -ljemalloc
```

822.palm_s: Same as 820.cloverleaf_s

849.fotonik3d_s: Same as 820.cloverleaf_s

865.roms_s: Same as 820.cloverleaf_s

Benchmarks using both C and C++:

```
-mabi=lp64 -std=c++17 -std=c18 -Wl,-allow-multiple-definition -static
-fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
```

(Continued on next page)



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SPECspeed®2026_fp_energy_base = 2.58
SPECspeed®2026_fp_peak = 5.69
SPECspeed®2026_fp_energy_peak = 2.62

CPU2026 License: 6412
Test Sponsor: Ampere Computing, Inc.
Tested by: Ampere Computing, Inc.

Test Date: Feb-2026
Hardware Availability: Nov-2025
Software Availability: Oct-2025

Base Optimization Flags (Continued)

Benchmarks using both C and C++ (continued):

```
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib -g -Ofast
-mcpu=ampere1a -flto=32 -funroll-loops --param early-inlining-insns=96
--param max-inline-insns-auto=64 --param inline-unit-growth=96
--param early-inlining-insns=256 --param max-inline-insns-auto=128
--param inline-unit-growth=256 -ffinite-loops -fopenmp -DSPEC_OPENMP
-u malloc -ljemalloc_ext
```

Base Other Flags

C benchmarks:

```
-w -Wl,-Map,mapfile
```

C++ benchmarks:

```
-Wl,-Map,mapfile
```

Fortran benchmarks:

```
-Wl,-Map,mapfile
```

Benchmarks using both C and C++:

```
-w -Wl,-Map,mapfile
```

Peak Compiler Invocation

C benchmarks:

```
gcc
```

C++ benchmarks:

```
g++
```

Fortran benchmarks:

```
gfortran
```

Benchmarks using both C and C++:

```
g++ gcc
```



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Peak Portability Flags

800.pot3d_s: -DSPEC_SUPPRESS_LOCAL_AND_REDUCE
867.nest_s: -fno-finite-math-only

Peak Optimization Flags

C benchmarks:

```
811.tealeaf_s: -mabi=lp64 -std=c18 -Wl,-allow-multiple-definition
-static -fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-fprofile-generate -fprofile-use
-fprofile-partial-training -g -Ofast -mcpu=amperela
-flto=32 -funroll-loops --param early-inlining-insns=96
--param max-inline-insns-auto=64
--param inline-unit-growth=96 -fopenmp -DSPEC_OPENMP
-u malloc -ljemalloc
```

816.nab_s: basepeak = yes

881.neutron_s: basepeak = yes

C++ benchmarks:

803.sph_exa_s: basepeak = yes

```
857.namd_s: -mabi=lp64 -std=c++17 -Wl,-allow-multiple-definition
-static -fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-fprofile-generate -fprofile-use
-fprofile-partial-training -g -Ofast -mcpu=amperela
-flto=32 -funroll-loops --param early-inlining-insns=256
--param max-inline-insns-auto=128
--param inline-unit-growth=256 -ffinite-loops -fopenmp
-DSPEC_OPENMP -u malloc -ljemalloc_ext
```

867.nest_s: Same as 857.namd_s

(Continued on next page)



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Test Date: Feb-2026
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Peak Optimization Flags (Continued)

872.marian_s: basepeak = yes

Fortran benchmarks:

800.pot3d_s: basepeak = yes

820.cloverleaf_s: -mabi=lp64 -std=f2008 -Wl,-allow-multiple-definition
-static -fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-fprofile-generate -fprofile-use
-fprofile-partial-training -g -Ofast -mcpu=amperela
-flto=32 -funroll-loops -fallow-argument-mismatch
-DSPEC_OPENMP -fopenmp -u malloc -ljemalloc

822.palm_s: Same as 820.cloverleaf_s

849.fotonik3d_s: basepeak = yes

865.roms_s: Same as 820.cloverleaf_s

Benchmarks using both C and C++:

-mabi=lp64 -std=c++17 -std=c18 -Wl,-allow-multiple-definition -static
-fwhole-program
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib64
-L/home/ampctest/ampere_spec2026/spec2026/gcc/install/lib
-L/home/ampctest/ampere_spec2026/spec2026/jemalloc/install/lib
-fprofile-generate -fprofile-use -fprofile-partial-training -g -Ofast
-mcpu=amperela -flto=32 -funroll-loops --param early-inlining-insns=96
--param max-inline-insns-auto=64 --param inline-unit-growth=96
--param early-inlining-insns=256 --param max-inline-insns-auto=128
--param inline-unit-growth=256 -ffinite-loops -fopenmp -DSPEC_OPENMP
-u malloc -ljemalloc_ext

Peak Other Flags

C benchmarks:

-w -Wl,-Map,mapfile

C++ benchmarks:

-Wl,-Map,mapfile

(Continued on next page)



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Test Date: Feb-2026
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Peak Other Flags (Continued)

Fortran benchmarks:
-Wl, -Map, mapfile

Benchmarks using both C and C++:
-w -Wl, -Map, mapfile

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

<http://www.spec.org/cpu2026/results/flags/gcc-rev-A2.html>
<http://www.spec.org/cpu2026/results/flags/GIGA-BYTE-platform-settings-AmpereOneM-rev.1.html>

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

<http://www.spec.org/cpu2026/results/flags/gcc-rev-A2.xml>
<http://www.spec.org/cpu2026/results/flags/GIGA-BYTE-platform-settings-AmpereOneM-rev.1.xml>

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