



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL385 Gen11

(2.10 GHz, AMD EPYC 9845)

SPECrate®2026_fp_base = 896

SPECrate®2026_fp_peak = 918

CPU2026 License: 3

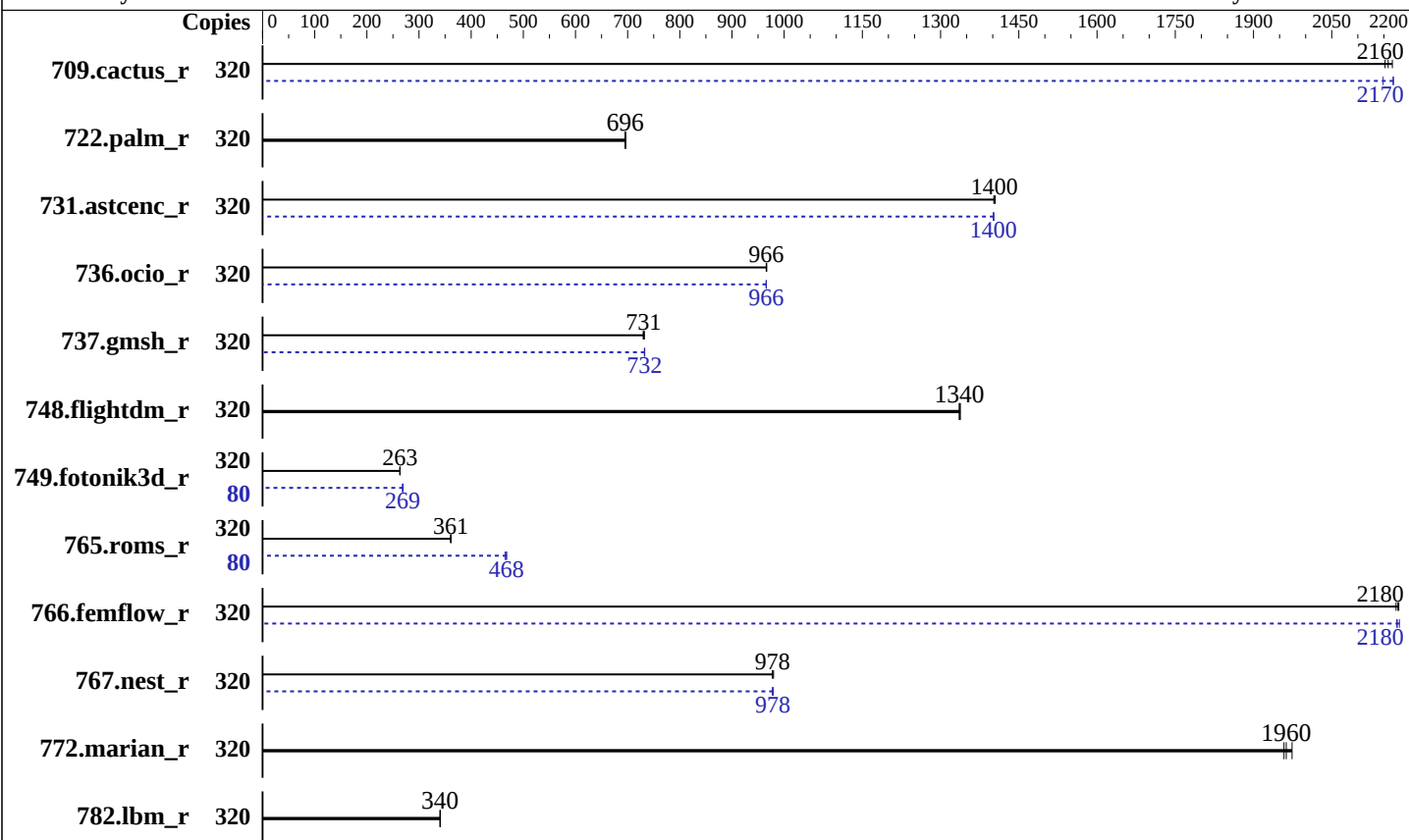
Test Sponsor: HPE

Tested by: HPE

Test Date: Aug-2026

Hardware Availability: Mar-2025

Software Availability: Jan-2026



Hardware

CPU Name: AMD EPYC 9845
Max MHz: 3700
Nominal: 2100
Enabled: 320 cores, 2 chips
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: 320 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)
Storage: 1 x 480 GB NVMe SSD
Cooling: Air
Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP7
Kernel 6.4.0-150700.53.6-default
Compiler: C/C++/Fortran: Version 5.1.0 of AOCC
Compiler Category: Vendor
Firmware: HPE BIOS Version v3.12 04/02/2026
released Apr-2026
File System: btrfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: None
Power Management: BIOS set to prefer performance at the
cost of additional power usage



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
709.cactus_r	320	128	2150	<u>127</u>	<u>2160</u>	127	2170	320	<u>127</u>	<u>2170</u>	128	2150	127	2170
722.palm_r	320	608	695	606	697	<u>607</u>	<u>696</u>	320	608	695	606	697	<u>607</u>	<u>696</u>
731.astcenc_r	320	192	1400	<u>192</u>	<u>1400</u>	191	1400	320	192	1400	192	1400	<u>192</u>	<u>1400</u>
736.ocio_r	320	<u>290</u>	<u>966</u>	290	967	290	966	320	290	966	<u>290</u>	<u>966</u>	290	966
737.gmsh_r	320	201	730	<u>201</u>	<u>731</u>	201	732	320	201	732	200	733	<u>201</u>	<u>732</u>
748.flightdm_r	320	<u>171</u>	<u>1340</u>	172	1340	171	1340	320	<u>171</u>	<u>1340</u>	172	1340	171	1340
749.fotonik3d_r	320	<u>1404</u>	<u>263</u>	1405	263	1404	264	80	<u>344</u>	<u>269</u>	343	269	345	268
765.roms_r	320	1396	361	<u>1396</u>	<u>361</u>	1397	361	80	<u>269</u>	<u>468</u>	269	468	271	465
766.femflow_r	320	215	2180	<u>216</u>	<u>2180</u>	216	2170	320	<u>216</u>	<u>2180</u>	215	2180	216	2170
767.nest_r	320	259	980	<u>259</u>	<u>978</u>	260	978	320	<u>259</u>	<u>978</u>	260	978	259	979
772.marian_r	320	258	1960	256	1970	<u>257</u>	<u>1960</u>	320	258	1960	256	1970	<u>257</u>	<u>1960</u>
782.lbm_r	320	538	341	539	340	<u>539</u>	<u>340</u>	320	538	341	539	340	<u>539</u>	<u>340</u>

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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.

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Operating System Notes (Continued)

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.

Environment Variables Notes

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

LD_LIBRARY_PATH =

"/home/cpu2026_rate_2/amd_rate_aocc510_znver5_B_lib/lib:/home/cpu2026_rate_2/amd_rate_aocc510_znver5_B_lib/lib32:"

MALLOC_CONF = "retain:true"

General Notes

Binaries were compiled on a system with 2x AMD EPYC Venice256 CPU + 2TiB

Memory using Ubuntu 24.04

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

Platform Notes

BIOS Configurations : Parameters are selected in the order shown below

Workload Profile set to General Throughput Compute

Determinism Control set to Manual

Performance Determinism set to Power Deterministic

Memory Patrol Scrubbing set to Disabled

NUMA memory domains per socket set to Two memory domains per socket

Thermal Configuration set to Maximum Cooling

AMD SMT Option set to Disabled

Workload Profile set to Custom

L1 HW Prefetcher set to Disabled

L2 HW Prefetcher set to Disabled

Package Power Limit Control Mode set to Manual

Package Power Limit Value set to 400

Sysinfo program /home/cpu2026_rate_2/bin/sysinfo

Rev: 779ab21020787073335a329f3a45e2cd

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Platform Notes (Continued)

running on tbls12ex6401 Wed Aug 19 12:17:38 2026

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

Table of contents

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. who -r
11. Systemd service manager version: systemd 254 (254.27+suse.167.g130293e510)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

1. uname -srvm

Linux 6.4.0-150700.53.6-default #1 SMP PREEMPT_DYNAMIC Tue Jul 1 14:54:47 UTC 2025 (8ab7501) x86_64

2. w

12:17:38 up 11:03, 8 users, load average: 0.25, 0.07, 0.02

USER	TTY	FROM	LOGIN@	IDLE	JCPU	PCPU	WHAT
root	pts/0	172.16.0.100	02:29	1:38	0.10s	0.10s	-bash
root	pts/1	172.16.0.100	08:27	3:47m	0.05s	0.05s	-bash

3. Username

From environment variable \$USER: root

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Platform Notes (Continued)

```
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) 6190358
max locked memory       (kbytes, -l) 2048
max memory size         (kbytes, -m) unlimited
open files              (-n) 1024
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) 6190358
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@notty
/bin/bash $SPEC/run_rate_sh.sh
python3 ./run_rate.py
runcpu --config amd_rate_aocc510_znver5_B1.cfg --tune all --reportable --iterations 3 fprate
runcpu --configfile amd_rate_aocc510_znver5_B1.cfg --tune all --reportable --iterations 3 --nopower
--runmode rate --tune base:peak --size test:train:refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2026.001/temlogs/preenv.fprate.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026_rate_2
```

6. /proc/cpuinfo

```
model name      : AMD EPYC 9845 160-Core Processor
vendor_id       : AuthenticAMD
cpu family      : 26
model           : 17
stepping        : 0
microcode       : 0xb101059
bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srs0
TLB size        : 192 4K pages
cpu cores       : 160
siblings        : 160
2 physical ids (chips)
320 processors (hardware threads)
```

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Platform Notes (Continued)

physical id 0: core ids 0-159

physical id 1: core ids 0-159

physical id 0: apicids 0-159

physical id 1: apicids 256-415

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 2.40.4:

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): 320
On-line CPU(s) list: 0-319
Vendor ID: AuthenticAMD
Model name: AMD EPYC 9845 160-Core Processor
CPU family: 26
Model: 17
Thread(s) per core: 1
Core(s) per socket: 160
Socket(s): 2
Stepping: 0
BogoMIPS: 4193.77

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 aperfmpperf 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 bpeext 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 amd_ibpb_ret 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 movdiri movdir64b overflow_recov succor smca fsmr
avx512_vp2intersect flush_l1d debug_swap hv_inuse_wr_allowed

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Platform Notes (Continued)

Virtualization: srso_user_kernel_no amd_lbr_pmc_freeze
AMD-V
L1d cache: 15 MiB (320 instances)
L1i cache: 10 MiB (320 instances)
L2 cache: 320 MiB (320 instances)
L3 cache: 640 MiB (20 instances)
NUMA node(s): 4
NUMA node0 CPU(s): 0-79
NUMA node1 CPU(s): 80-159
NUMA node2 CPU(s): 160-239
NUMA node3 CPU(s): 240-319
Vulnerability Gather data sampling: 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 Reg file data sampling: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec rstack overflow: Mitigation; IBPB on VMEXIT only
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 disabled; PBRSE-eIBRS Not affected; BHI Not affected
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	15M	12	Data	1	64	1	64
L1i	32K	10M	8	Instruction	1	64	1	64
L2	1M	320M	16	Unified	2	1024	1	64
L3	32M	640M	16	Unified	3	32768	1	64

8. numactl --hardware

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

available: 4 nodes (0-3)

node 0 cpus: 0-79

node 0 size: 386630 MB

node 0 free: 385604 MB

node 1 cpus: 80-159

node 1 size: 387050 MB

node 1 free: 384984 MB

node 2 cpus: 160-239

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Platform Notes (Continued)

node 2 size: 387050 MB

node 2 free: 386148 MB

node 3 cpus: 240-319

node 3 size: 386887 MB

node 3 free: 385479 MB

node distances:

node 0 1 2 3

0: 10 12 32 32

1: 12 10 32 32

2: 32 32 10 12

3: 32 32 12 10

9. /proc/meminfo

MemTotal: 1584762016 kB

10. who -r

run-level 3 Aug 19 01:15

11. Systemd service manager version: systemd 254 (254.27+suse.167.g130293e510)

Default Target Status

multi-user running

12. Services, from systemctl list-unit-files

STATE UNIT FILES

enabled ModemManager YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd
bluetooth cron display-manager getty@ irqbalance issue-generator kbdsettings klog
lvm2-monitor nsd nvme-fc-boot-connections nvme-autoconnect postfix purge-kernels rollback
rsyslog smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6
wickedd-nanny wpa_supplicant

enabled-runtime systemd-remount-fs

disabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon autofs
autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates
chrony-wait chronyd console-getty cups cups-browsed debug-shell dnsmasq ebttables
exchange-bmc-os-info firewalld fsidd gnome-remote-desktop gpm grub2-once haveged
hwloc-dump-hwdata ipmi ipmievdev issue-add-ssh-keys kexec-load lunmask man-db-create
multipathd nfs nfs-blkmap nmb openvpn@ ostree-remount ostree-state-overlay@ rpcbind
rpmconfigcheck rsyncd rtkit-daemon samba-bgqd serial-getty@ smartd-generate_opts smb snmpd
snmptrapd speech-dispatcher systemd-boot-check-no-failures systemd-confext
systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned
udisks2 update-system-flatpaks upower vncserver@ wpa_supplicant@
indirect pcsd saned@ systemd-userdbd wickedd

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Platform Notes (Continued)

13. Linux kernel boot-time arguments, from /proc/cmdline

BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.53.6-default

root=UUID=cd092176-2be7-4625-9c6a-0a85c8595192

splash=silent

mitigations=auto

quiet

security=apparmor

14. cpupower frequency-info

analyzing CPU 69:

Unable to determine current policy

boost state support:

Supported: yes

Active: yes

15. sysctl

kernel.numa_balancing 1

kernel.randomize_va_space 0

vm.compaction_proactiveness 20

vm.dirty_background_bytes 0

vm.dirty_background_ratio 10

vm.dirty_bytes 0

vm.dirty_expire_centisecs 3000

vm.dirty_ratio 8

vm.dirty_writeback_centisecs 500

vm.dirtytime_expire_seconds 43200

vm.extfrag_threshold 500

vm.min_unmapped_ratio 1

vm.nr_hugepages 0

vm.nr_hugepages_mempolicy 0

vm.nr_overcommit_hugepages 0

vm.swappiness 1

vm.watermark_boost_factor 15000

vm.watermark_scale_factor 10

vm.zone_reclaim_mode 1

16. /sys/kernel/mm/transparent_hugepage

defrag [always] defer defer+madvise madvise never

enabled [always] madvise never

hpage_pmd_size 2097152

shmem_enabled always within_size advise [never] deny force

17. /sys/kernel/mm/transparent_hugepage/khugepaged

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Platform Notes (Continued)

alloc_sleep_millisecs	60000
defrag	1
max_ptes_none	511
max_ptes_shared	256
max_ptes_swap	64
pages_to_scan	4096
scan_sleep_millisecs	10000

18. OS release

From /etc/*-release /etc/*-version

os-release SUSE Linux Enterprise Server 15 SP7

19. Disk information

SPEC is set to: /home/cpu2026_rate_2

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/nvme0n1p2	btrfs	447G	92G	350G	21%	/home

20. /sys/devices/virtual/dmi/id

Vendor:	HPE
Product:	ProLiant DL385 Gen11
Product Family:	ProLiant
Serial:	DL385G11-012

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:

10x Micron MTC40F2046S1RC64BD2 MWFF 64 GB 2 rank 6400

14x Micron MTC40F2046S1RC64BD2 QSFF 64 GB 2 rank 6400

22. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor:	HPE
BIOS Version:	3.12
BIOS Date:	04/02/2026
BIOS Revision:	3.12
Firmware Revision:	1.73



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Compiler Version Notes

=====
C | 782.lbm_r(base, peak)
=====

AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
=====

=====
C++ | 731.astcenc_r(base, peak) 736.ocio_r(base, peak)
=====

| 748.flightdm_r(base, peak) 766.femflow_r(base, peak)

| 767.nest_r(base, peak) 772.marian_r(base, peak)
=====

AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
=====

=====
C++, C | 709.cactus_r(base, peak) 737.gmsh_r(base, peak)
=====

AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
=====

=====
Fortran | 722.palm_r(base, peak) 749.fotonik3d_r(base, peak) 765.roms_r(base, peak)
=====

AMD clang version 17.0.6 (CLANG: AOCC_5.1.0-Build#1994 2025_12_23)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-5.1.0/bin
=====

Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

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SPEC CPU®2026 Floating Point Rate Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL385 Gen11

(2.10 GHz, AMD EPYC 9845)

SPECrate®2026_fp_base = 896

SPECrate®2026_fp_peak = 918

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Aug-2026

Hardware Availability: Mar-2025

Software Availability: Jan-2026

Base Compiler Invocation (Continued)

Fortran benchmarks:

flang

Benchmarks using both C and C++:

clang++ clang

Base Portability Flags

736.ocio_r: -fno-finite-math-only

737.gmsh_r: -fno-fast-math

748.flightdm_r: -fno-reciprocal-math

767.nest_r: -fno-finite-math-only

Base Optimization Flags

C benchmarks:

-m64 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

-Wl,-mllvm -Wl,-reduce-array-computations=3

-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather

-ffast-math -O3 -march=znver5 -fveclib=AMDLIBM -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

C++ benchmarks:

-m64 -std=c++17 -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

-ffast-math -O3 -march=znver5 -fveclib=AMDLIBM -flto

-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000

-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lamdalloc

-lflang

Fortran benchmarks:

-m64 -Mstandard -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 -ffast-math -O3

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Base Optimization Flags (Continued)

Fortran benchmarks (continued):

-march=znver5 -fveclib=AMDLIBM -flto -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm -lamdalloc
-lflang

Benchmarks using both C and C++:

-m64 -std=c++17 -std=c18 -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
-ffast-math -O3 -march=znver5 -fveclib=AMDLIBM -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

Peak Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Benchmarks using both C and C++:

clang++ clang

Peak Portability Flags

736.ocio_r: -fno-finite-math-only
737.gmsl_r: -fno-fast-math
748.flightdm_r: -fno-reciprocal-math
767.nest_r: -fno-finite-math-only



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Software Availability: Jan-2026

Peak Optimization Flags

C benchmarks:

782.lbm_r: basepeak = yes

C++ benchmarks:

731.astcenc_r: -m64 -std=c++17
-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 -ffast-math -O3
-march=znver5 -fveclib=AMDLIBM -flto
-mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lamdalloc -lflang

736.ocio_r: Same as 731.astcenc_r

748.flightdm_r: basepeak = yes

766.femflow_r: Same as 731.astcenc_r

767.nest_r: Same as 731.astcenc_r

772.marian_r: basepeak = yes

Fortran benchmarks:

722.palm_r: basepeak = yes

749.fotonik3d_r: -m64 -Mstandard
-Wl, -mllvm -Wl, -align-all-nofallthru-blocks=6
-Wl, -mllvm -Wl, -reduce-array-computations=3 -ffast-math
-Ofast -march=znver5 -fveclib=AMDLIBM -flto -Mrecursive
-mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm
-lamdalloc -lflang

765.roms_r: Same as 749.fotonik3d_r

Benchmarks using both C and C++:

-m64 -std=c++17 -std=c18 -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
-ffast-math -O3 -march=znver5 -fveclib=AMDLIBM -fno-PIE -no-pie

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Peak Optimization Flags (Continued)

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

-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

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

<http://www.spec.org/cpu2026/results/flags/HPE-Platform-Flags-AMD-Turin-rev1.12.html>

<http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.00.html>

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

<http://www.spec.org/cpu2026/results/flags/HPE-Platform-Flags-AMD-Turin-rev1.12.xml>

<http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.00.xml>

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