



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

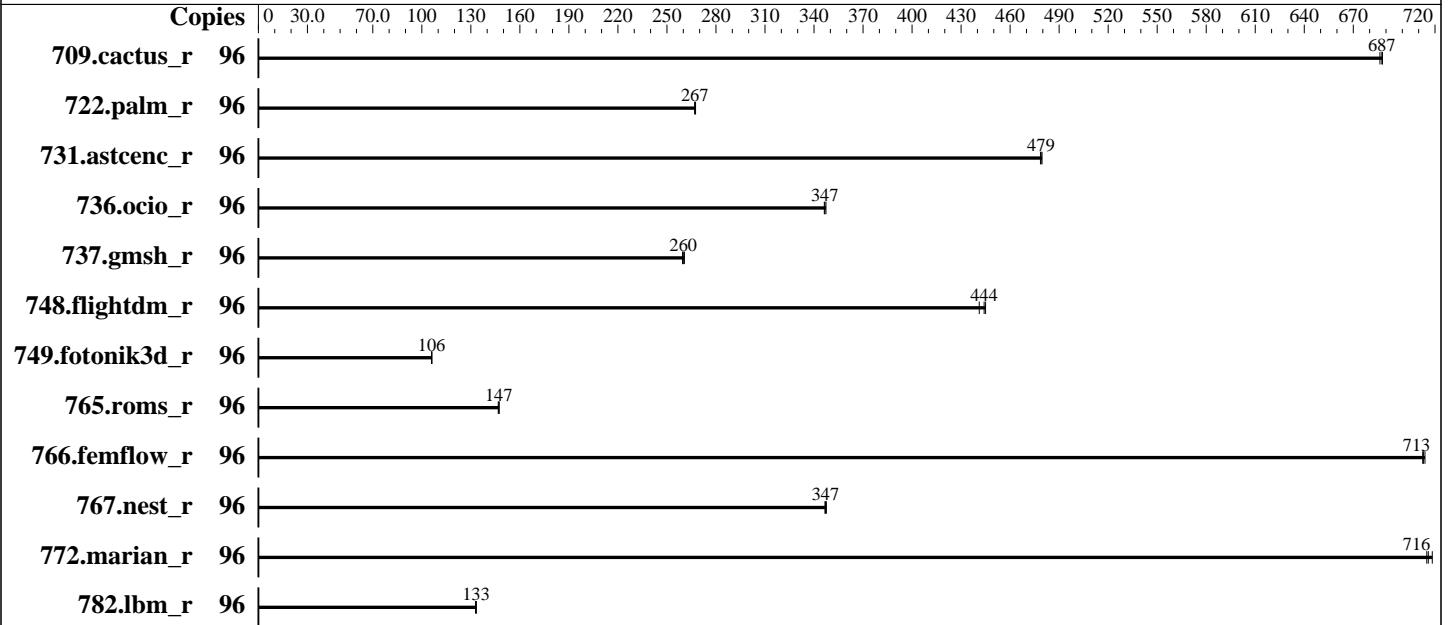
Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026



Hardware

CPU Name: AMD EPYC 9654P
 Max MHz: 3700
 Nominal: 2400
 Enabled: 96 cores, 1 chip
 Orderable: 1 Chip
 Cache L1: 32 KB I + 32 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 / 8 cores
 Other: None
 Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 1 x 480 GB NVMe SSD
 Cooling: CLC
 Other: None

Software

OS: Ubuntu 24.04.3 LTS
 Kernel 6.8.0-90-generic
 Compiler: C/C++/Fortran: Version 5.1.0 of AOCC
 Compiler Category: Vendor
 Firmware: HPE BIOS Version v2.90
 released Jan-2026
 File System: ext4
 System State: Run level 5 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 64-bit
 Other: None
 Power Management: BIOS and OS is set to prefer performance at the cost of additional power usage



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Jan-2026
Hardware Availability: Aug-2023
Software Availability: Jan-2026

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
709.cactus_r	96	120	687	120	686	120	688	96	120	687	120	686	120	688
722.palm_r	96	474	267	474	267	475	267	96	474	267	474	267	475	267
731.ascenc_r	96	168	480	169	479	168	479	96	168	480	169	479	168	479
736.ocio_r	96	242	347	242	347	243	346	96	242	347	242	347	243	346
737.gmsh_r	96	169	260	170	260	169	261	96	169	260	170	260	169	261
748.flightdm_r	96	156	441	154	445	155	444	96	156	441	154	445	155	444
749.fotonik3d_r	96	1046	106	1046	106	1046	106	96	1046	106	1046	106	1046	106
765.roms_r	96	1026	147	1028	147	1030	147	96	1026	147	1028	147	1030	147
766.femflow_r	96	198	712	197	714	198	713	96	198	712	197	714	198	713
767.nest_r	96	219	347	220	347	219	348	96	219	347	220	347	219	348
772.marian_r	96	212	715	212	716	211	718	96	212	715	212	716	211	718
782.lbm_r	96	414	133	413	133	413	133	96	414	133	413	133	413	133

SPECrate®2026_fp_base = **323**

SPECrate®2026_fp_peak = **323**

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.

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026

Operating System Notes (Continued)

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.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH =
"/home/cpu2026/amd_rate_aocc510_znver5_A_lib/lib:/home/cpu2026/amd_rate_aocc510_znver5_A_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
AMD Core Performance Boost set to Enabled
AMD SMT Option set to Disabled
Determinism Control set to Manual
Performance Determinism set to Power Deterministic
Last-Level Cache (LLC) as NUMA Node set to Enabled
NUMA memory domains per socket set to Four memory domains per socket
Memory Patrol Scrubbing set to Disabled
ACPI CST C2 Latency set to 18 microseconds
Thermal Configuration set to Maximum Cooling
Workload Profile set to Custom
Power Regulator set to OS Control Mode

Sysinfo program /home/cpu2026/bin/sysinfo

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Jan-2026
Hardware Availability: Aug-2023
Software Availability: Jan-2026

Platform Notes (Continued)

Rev: 069f95da7e7f5d81b2ce48a82150e54f
running on admin1 Wed Jan 28 10:08:01 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 255 (255.4-lubuntu8.12)
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
22. dmidecode
23. BIOS

1. uname -srvm
Linux 6.8.0-90-generic #91-Ubuntu SMP PREEMPT_DYNAMIC Tue Nov 18 14:14:30 UTC 2025 x86_64

2. w
10:08:01 up 6:51, 9 users, load average: 0.14, 0.03, 0.01
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
admin1 172.16.0.111 10:07 2:43m 0.00s 0.02s sshd: admin1 [priv]
admin1 172.16.0.111 10:07 2:43m 0.00s 0.02s sshd: admin1 [priv]
admin1 172.16.0.111 10:07 2:43m 0.00s 0.02s sshd: admin1 [priv]
admin1 172.16.0.111 10:07 2:43m 0.00s 0.02s sshd: admin1 [priv]
admin1 172.16.0.100 07:54 2:43m 0.00s 0.03s sshd: admin1 [priv]
admin1 172.16.0.100 07:48 2:43m 0.00s 0.06s sshd: admin1 [priv]

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026

Platform Notes (Continued)

```

adminl          172.16.0.100    07:41    2:43m  0.00s  0.02s sshd: adminl [priv]
adminl          172.16.0.100    03:23    2:43m  0.00s  0.10s sshd: adminl [priv]
adminl  tty1      -              03:22    6:45m  0.08s  0.03s -bash

```

3. Username

```

From environment variable $USER:  root
From the command 'logname':      adminl

```

4. ulimit -a

```

time(seconds)          unlimited
file(blocks)           unlimited
data(kbytes)           unlimited
stack(kbytes)          unlimited
coredump(blocks)      0
memory(kbytes)         unlimited
locked memory(kbytes) 2097152
process                3094496
nofiles                1024
vmemory(kbytes)        unlimited
locks                  unlimited
rtprio                 0

```

5. sysinfo process ancestry

```

/sbin/init
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: adminl [priv]
sshd: adminl@notty
/bin/bash $SPEC/run_fprate_sh.sh
sudo ./run_fprate.py
python3 ./run_fprate.py
/bin/bash ./amd_rate_aocc510_znver5_A1.sh
runcpu --config amd_rate_aocc510_znver5_A1.cfg --tune base --reportable --iterations 3 fprate
runcpu --configfile amd_rate_aocc510_znver5_A1.cfg --tune base --reportable --iterations 3 --nopower
--runmode rate --tune base --size test:train:refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2026.001/templogs/preenv.fprate.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026

```

6. /proc/cpuinfo

```

model name      : AMD EPYC 9654P 96-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 25
model          : 17

```

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026

Platform Notes (Continued)

```

stepping          : 1
microcode         : 0xa101158
bugs              : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso vmscape
TLB size         : 3584 4K pages
cpu cores        : 96
siblings         : 96
1 physical ids (chips)
96 processors (hardware threads)
physical id 0: core ids 0-95
physical id 0: apicids 0-95

```

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):                96
On-line CPU(s) list:  0-95
Vendor ID:             AuthenticAMD
BIOS Vendor ID:       Advanced Micro Devices, Inc.
Model name:            AMD EPYC 9654P 96-Core Processor
BIOS Model name:      AMD EPYC 9654P 96-Core Processor          CPU @ 2.4GHz
BIOS CPU family:      107
CPU family:            25
Model:                 17
Thread(s) per core:   1
Core(s) per socket:   96
Socket(s):             1
Stepping:              1
Frequency boost:      enabled
CPU(s) scaling MHz:   103%
CPU max MHz:          2400.0000
CPU min MHz:          1500.0000
BogoMIPS:              4792.58
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 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_13 cdp_13 hw_pstate ssbd mba perfmon_v2

```

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Jan-2026
Hardware Availability: Aug-2023
Software Availability: Jan-2026

Platform Notes (Continued)

ibrs ibpb stibp ibrs_enhanced vmcall fsgsbase 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 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 overflow_recov succor smca fsrm flush_lld
debug_swap ibpb_exit_to_user

Virtualization: AMD-V
L1d cache: 3 MiB (96 instances)
L1i cache: 3 MiB (96 instances)
L2 cache: 96 MiB (96 instances)
L3 cache: 384 MiB (12 instances)
NUMA node(s): 12
NUMA node0 CPU(s): 0-7
NUMA node1 CPU(s): 8-15
NUMA node2 CPU(s): 16-23
NUMA node3 CPU(s): 24-31
NUMA node4 CPU(s): 32-39
NUMA node5 CPU(s): 40-47
NUMA node6 CPU(s): 48-55
NUMA node7 CPU(s): 56-63
NUMA node8 CPU(s): 64-71
NUMA node9 CPU(s): 72-79
NUMA node10 CPU(s): 80-87
NUMA node11 CPU(s): 88-95
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: Mitigation; Safe RET
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS; IBPB conditional; STIBP disabled; RSB filling; PBRSE-eIBRS Not affected; BHI Not affected
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected
Vulnerability Vmscape: Mitigation; IBPB before exit to userspace

From lscpu --cache:

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Jan-2026
Hardware Availability: Aug-2023
Software Availability: Jan-2026

Platform Notes (Continued)

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
Lld	32K	3M	8	Data	1	64	1	64
Lli	32K	3M	8	Instruction	1	64	1	64
L2	1M	96M	8	Unified	2	2048	1	64
L3	32M	384M	16	Unified	3	32768	1	64

8. numactl --hardware

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

available: 12 nodes (0-11)

node 0 cpus: 0-7

node 0 size: 64194 MB

node 0 free: 63510 MB

node 1 cpus: 8-15

node 1 size: 64509 MB

node 1 free: 64322 MB

node 2 cpus: 16-23

node 2 size: 64509 MB

node 2 free: 64244 MB

node 3 cpus: 24-31

node 3 size: 64465 MB

node 3 free: 64276 MB

node 4 cpus: 32-39

node 4 size: 64509 MB

node 4 free: 64324 MB

node 5 cpus: 40-47

node 5 size: 64509 MB

node 5 free: 64347 MB

node 6 cpus: 48-55

node 6 size: 64509 MB

node 6 free: 64349 MB

node 7 cpus: 56-63

node 7 size: 64509 MB

node 7 free: 64349 MB

node 8 cpus: 64-71

node 8 size: 64509 MB

node 8 free: 64340 MB

node 9 cpus: 72-79

node 9 size: 64509 MB

node 9 free: 64271 MB

node 10 cpus: 80-87

node 10 size: 64509 MB

node 10 free: 64352 MB

node 11 cpus: 88-95

node 11 size: 64461 MB

node 11 free: 64212 MB

node distances:

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Jan-2026
Hardware Availability: Aug-2023
Software Availability: Jan-2026

Platform Notes (Continued)

node	0	1	2	3	4	5	6	7	8	9	10	11
0:	10	11	11	12	12	12	12	12	12	12	12	12
1:	11	10	11	12	12	12	12	12	12	12	12	12
2:	11	11	10	12	12	12	12	12	12	12	12	12
3:	12	12	12	10	11	11	12	12	12	12	12	12
4:	12	12	12	11	10	11	12	12	12	12	12	12
5:	12	12	12	11	11	10	12	12	12	12	12	12
6:	12	12	12	12	12	12	10	11	11	12	12	12
7:	12	12	12	12	12	12	11	10	11	12	12	12
8:	12	12	12	12	12	12	11	11	10	12	12	12
9:	12	12	12	12	12	12	12	12	12	10	11	11
10:	12	12	12	12	12	12	12	12	12	11	10	11
11:	12	12	12	12	12	12	12	12	12	11	11	10

9. /proc/meminfo
MemTotal: 792272784 kB

10. who -r
run-level 5 Jan 28 03:17

11. Systemd service manager version: systemd 255 (255.4-1ubuntu8.12)
Default Target Status
graphical running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager apparmor appport blk-availability cloud-config cloud-final cloud-init cloud-init-local console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager grub-common grub-initrd-fallback keyboard-setup lvm2-monitor multipathd networkd-dispatcher open-iscsi open-vm-tools pollinate rsyslog secureboot-db setvtrgb snapd sysstat systemd-networkd systemd-networkd-wait-online systemd-pstore systemd-resolved thermald tuned ua-reboot-cmds ubuntu-advantage udisks2 ufw unattended-upgrades vgauth
enabled-runtime	netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled	console-getty debug-shell iscsid nftables rsync serial-getty@ ssh systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-networkd-wait-online@ systemd-pcrlock-file-system systemd-pcrlock-firmware-code systemd-pcrlock-firmware-config systemd-pcrlock-machine-id systemd-pcrlock-make-policy systemd-pcrlock-secureboot-authority systemd-pcrlock-secureboot-policy systemd-sysextr systemd-time-wait-sync systemd-timesyncd upower
indirect	systemd-sysupdate systemd-sysupdate-reboot uidd
masked	cryptdisks cryptdisks-early hwclock multipath-tools-boot screen-cleanup sudo x11-common

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026

Platform Notes (Continued)

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

```
BOOT_IMAGE=/boot/vmlinuz-6.8.0-90-generic
root=UUID=c8895b10-3344-47fb-81a4-2b6fb85bbd20
ro
```

14. cpupower frequency-info

analyzing CPU 48:

```
current policy: frequency should be within 1.50 GHz and 2.40 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.
```

boost state support:

```
Supported: yes
Active: yes
Boost States: 0
Total States: 3
Pstate-P0: 2400MHz
```

15. tuned-adm active

```
Current active profile: balanced
```

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

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026

Platform Notes (Continued)

```

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 Ubuntu 24.04.3 LTS

```

20. Disk information

SPEC is set to: /home/cpu2026

```

Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p2 ext4  438G  92G  325G  23% /

```

21. /sys/devices/virtual/dmi/id

```

Vendor:          HPE
Product:         ProLiant DL325 Gen11
Product Family: ProLiant
Serial:          DL325G11-008

```

22. dmidecode

Additional information from dmidecode 3.5 follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:

```

3x Hynix HMCG94AEBRA103N 64 GB 2 rank 4800
1x Hynix HMCG94AEBRA123N 64 GB 2 rank 4800
8x Hynix HMCG94MEBRA121N 64 GB 2 rank 4800

```

23. BIOS

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Jan-2026
Hardware Availability: Aug-2023
Software Availability: Jan-2026

Platform Notes (Continued)

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

BIOS Vendor: HPE
BIOS Version: 2.90
BIOS Date: 01/09/2026
BIOS Revision: 2.90
Firmware Revision: 1.70

Compiler Version Notes

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

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) 736.ocio_r(base) 748.flightdm_r(base)
766.femflow_r(base) 767.nest_r(base) 772.marian_r(base)

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) 737.gmsh_r(base)

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) 749.fotonik3d_r(base) 765.roms_r(base)

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



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3
Test Sponsor: HPE
Tested by: HPE

Test Date: Jan-2026
Hardware Availability: Aug-2023
Software Availability: Jan-2026

Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Benchmarks using both C and C++:

clang++ clang

Base Portability Flags

709.cactus_r: -DSPEC_LP64
722.palm_r: -DSPEC_LP64
731.ascenc_r: -DSPEC_LP64
736.ocio_r: -fno-finite-math-only -DSPEC_LP64
737.gmsh_r: -fno-fast-math -DSPEC_LP64
748.flightdm_r: -fno-reciprocal-math -DSPEC_LP64
749.fotonik3d_r: -DSPEC_LP64
765.roms_r: -DSPEC_LP64
766.femflow_r: -DSPEC_LP64
767.nest_r: -fno-finite-math-only -DSPEC_LP64
772.marian_r: -DSPEC_LP64
782.lbm_r: -DSPEC_LP64

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

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026

Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-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
-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 Optimization Flags

C benchmarks:

782.lbm_r: basepeak = yes

C++ benchmarks:

731.astcenc_r: basepeak = yes

736.ocio_r: basepeak = yes

748.flightdm_r: basepeak = yes

766.femflow_r: basepeak = yes

(Continued on next page)



SPEC CPU®2026 Floating Point Rate Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL325 Gen11

(2.40 GHz, AMD EPYC 9654P)

SPECrate®2026_fp_base = 323

SPECrate®2026_fp_peak = 323

CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Jan-2026

Hardware Availability: Aug-2023

Software Availability: Jan-2026

Peak Optimization Flags (Continued)

767.nest_r: basepeak = yes

772.marian_r: basepeak = yes

Fortran benchmarks:

722.palm_r: basepeak = yes

749.fotonik3d_r: basepeak = yes

765.roms_r: basepeak = yes

Benchmarks using both C and C++:

709.cactus_r: basepeak = yes

737.gmsh_r: basepeak = yes

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-rev1.11.html>

<http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.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-rev1.11.xml>

<http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-05-04.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®2026 v0.902.0 on 2026-01-28 05:08:00-0500.

Report generated on 2026-05-11 16:37:43 by CPU2026 PDF formatter (unknown).

Originally published on 2026-05-05.