SPEC CPU®2026 Floating Point Speed Result

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Hewlett Packard Enterprise

(Test Sponsor: HPE)

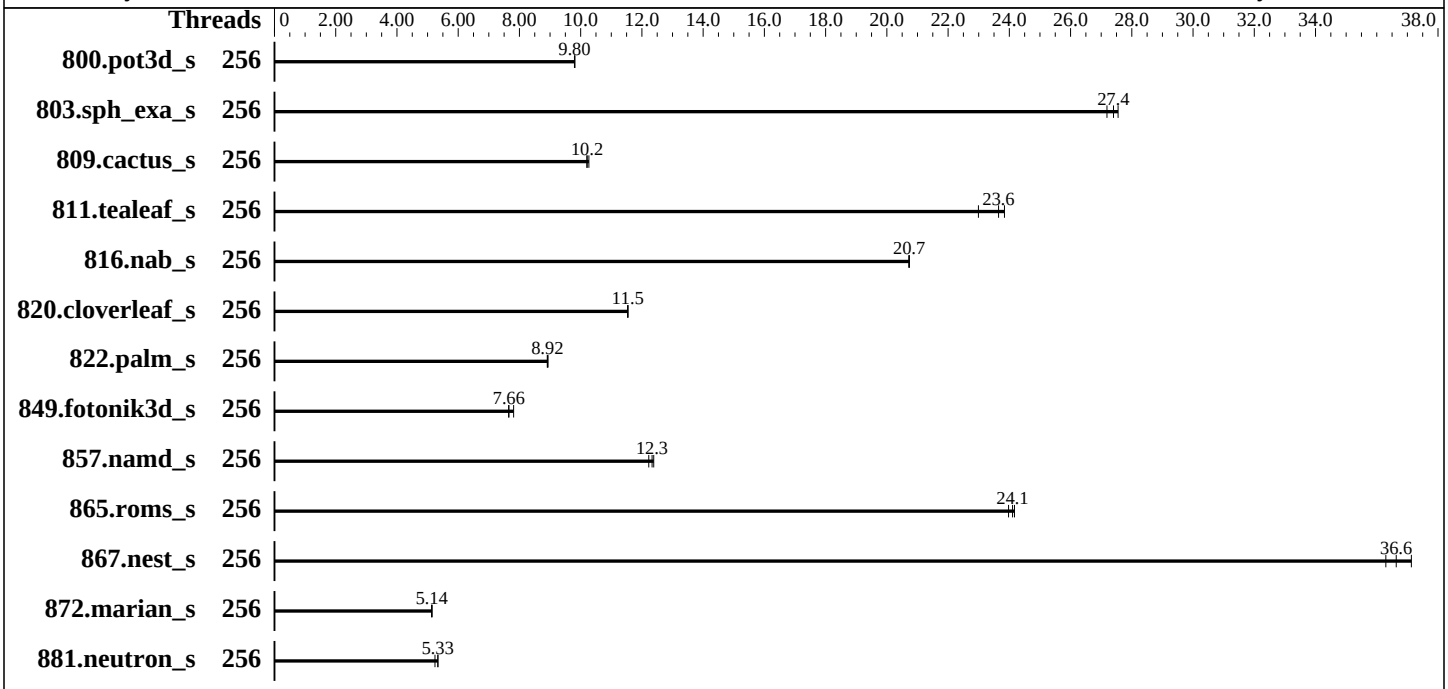
ProLiant DL385 Gen11
(2.25 GHz, AMD EPYC 9754)

SPECspeed®2026_fp_base = 13.0

SPECspeed®2026_fp_peak = 13.0

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

Test Date: Feb-2026
Hardware Availability: Jun-2023
Software Availability: Jan-2026



Hardware

CPU Name:	AMD EPYC 9754
Max MHz:	3100
Nominal:	2250
Enabled:	256 cores, 2 chips
Orderable:	1,2 chips
Cache L1:	32 KB I + 32 KB D on chip per core
L2:	1 MB I+D on chip per core
L3:	256 MB I+D on chip per chip, 16 MB shared / 8 cores
Other:	None
Memory:	3 TB (24 x 128 GB 2Rx4 PC5-4800B-R)
Storage:	1 x 480 GB NVMe SSD
Cooling:	DLC
Other:	None

Software

OS:	Ubuntu 24.04.3 LTS Kernel 6.8.0-94-generic
Compiler:	C/C++: Version 5.1.0 of AOCC Fortran: Flang v22
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

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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
800.pot3d_s	256	**68.7**	**9.80**	68.7	9.80	68.6	9.81	256	**68.7**	**9.80**	68.7	9.80	68.6	9.81
803.sph_exa_s	256	45.5	27.2	44.9	27.6	**45.2**	**27.4**	256	45.5	27.2	44.9	27.6	**45.2**	**27.4**
809.cactus_s	256	**110**	**10.2**	109	10.3	110	10.2	256	**110**	**10.2**	109	10.3	110	10.2
811.tealeaf_s	256	23.4	23.8	24.2	23.0	**23.6**	**23.6**	256	23.4	23.8	24.2	23.0	**23.6**	**23.6**
816.nab_s	256	54.3	20.7	**54.3**	**20.7**	54.3	20.7	256	54.3	20.7	**54.3**	**20.7**	54.3	20.7
820.cloverleaf_s	256	74.3	11.5	74.2	11.5	**74.3**	**11.5**	256	74.3	11.5	74.2	11.5	**74.3**	**11.5**
822.palm_s	256	138	8.91	**138**	**8.92**	137	8.94	256	138	8.91	**138**	**8.92**	137	8.94
849.fotonik3d_s	256	84.5	7.81	86.3	7.65	**86.2**	**7.66**	256	84.5	7.81	86.3	7.65	**86.2**	**7.66**
857.namd_s	256	117	12.4	119	12.2	**118**	**12.3**	256	117	12.4	119	12.2	**118**	**12.3**
865.roms_s	256	45.5	24.0	45.1	24.2	**45.2**	**24.1**	256	45.5	24.0	45.1	24.2	**45.2**	**24.1**
867.nest_s	256	58.2	37.1	59.5	36.3	**59.0**	**36.6**	256	58.2	37.1	59.5	36.3	**59.0**	**36.6**
872.marian_s	256	**211**	**5.14**	210	5.15	211	5.13	256	**211**	**5.14**	210	5.15	211	5.13
881.neutron_s	256	153	5.34	**153**	**5.33**	155	5.24	256	153	5.34	**153**	**5.33**	155	5.24

SPECspeed®2026_fp_base = 13.0

SPECspeed®2026_fp_peak = 13.0

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/
Flang v22 is available at
https://flang.llvm.org/
```

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,
```

(Continued on next page)

Operating System Notes (Continued)

```
'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.
```

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-255"
LD_LIBRARY_PATH =
     "/home/cpu2026/amd_speed_aocc510_flang22_znver5_A_lib/lib:/home/cpu2026/
     amd_speed_aocc510_flang22_znver5_A_lib/lib32:"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries were compiled on a system with an AMD EPYC 9754 CPU + 768 GiB
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 Peak Frequency Compute
Determinism Control set to Manual
 Performance Determinism set to Power Deterministic
AMD SMT Option set to Disabled
Last-Level Cache (LLC) as NUMA Node set to Enabled
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
 Rev: 069f95da7e7f5d81b2ce48a82150e54f
```

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Platform Notes (Continued)

```
running on admin1 Sun Feb  8 20:27:19 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 (255.4-1ubuntu8.12)
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 6.8.0-94-generic #96-Ubuntu SMP PREEMPT_DYNAMIC Fri Jan  9 20:36:55 UTC 2026 x86_64

------------------------------------------------------------
2. w
   20:27:19 up 7 min,  1 user,  load average: 0.16, 0.10, 0.07
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU  WHAT
  admin1            10.30.195.94     20:24    7:19   0.00s  0.05s sshd: admin1 [priv]

------------------------------------------------------------
3. Username
  From environment variable $USER:  root
  From the command 'logname':       admin1
```

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Platform Notes (Continued)

```
------------------------------------------------------------
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              12383913
  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: admin1 [priv]
 sshd: admin1@pts/0
 -bash
 sudo su
 sudo su
 su
 bash
 python3 ./run_amd_speed_aocc510_flang22_znver5_A1.py
 /bin/bash ./amd_speed_aocc510_flang22_znver5_A1.sh
runcpu --config amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3 fpspeed
runcpu --configfile amd_speed_aocc510_flang22_znver5_A1.cfg --tune base --reportable --iterations 3
  --nopower --runmode speed --tune base --size test:train:refspeed fpspeed --nopreenv --note-preenv
  --logfile $SPEC/tmp/CPU2026.001/templogs/preenv.fpspeed.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : AMD EPYC 9754 128-Core Processor
    vendor_id       : AuthenticAMD
    cpu family      : 25
    model           : 160
    stepping        : 1
    microcode       : 0xaa00116
    bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso vmscape
    TLB size        : 3584 4K pages
    cpu cores       : 128
    siblings        : 128
```

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Platform Notes (Continued)

```
     2 physical ids (chips)
     256 processors (hardware threads)
     physical id 0: core ids
    0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
     240-247
     physical id 1: core ids
    0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
     240-247
     physical id 0: apicids
    0-7,16-23,32-39,48-55,64-71,80-87,96-103,112-119,128-135,144-151,160-167,176-183,192-199,208-215,224-231,
     240-247
     physical id 1: apicids
    256-263,272-279,288-295,304-311,320-327,336-343,352-359,368-375,384-391,400-407,416-423,432-439,448-455,4
     64-471,480-487,496-503
   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):                               256
  On-line CPU(s) list:                  0-255
  Vendor ID:                            AuthenticAMD
  BIOS Vendor ID:                       Advanced Micro Devices, Inc.
  Model name:                           AMD EPYC 9754 128-Core Processor
  BIOS Model name:                    AMD EPYC 9754 128-Core Processor                CPU @ 2.2GHz
  BIOS CPU family:                      107
  CPU family:                           25
  Model:                                160
  Thread(s) per core:                   1
  Core(s) per socket:                   128
  Socket(s):                            2
  Stepping:                             1
  Frequency boost:                      enabled
  CPU(s) scaling MHz:                   100%
  CPU max MHz:                          2250.0000
  CPU min MHz:                          1500.0000
  BogoMIPS:                             4493.33
  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
```

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Platform Notes (Continued)

```
                    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 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_l1d
                             debug_swap ibpb_exit_to_user
Virtualization:              AMD-V
L1d cache:                   8 MiB (256 instances)
L1i cache:                   8 MiB (256 instances)
L2 cache:                    256 MiB (256 instances)
L3 cache:                    512 MiB (32 instances)
NUMA node(s):                32
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
NUMA node12 CPU(s):          96-103
NUMA node13 CPU(s):          104-111
NUMA node14 CPU(s):          112-119
NUMA node15 CPU(s):          120-127
NUMA node16 CPU(s):          128-135
NUMA node17 CPU(s):          136-143
NUMA node18 CPU(s):          144-151
NUMA node19 CPU(s):          152-159
NUMA node20 CPU(s):          160-167
NUMA node21 CPU(s):          168-175
NUMA node22 CPU(s):          176-183
NUMA node23 CPU(s):          184-191
NUMA node24 CPU(s):          192-199
NUMA node25 CPU(s):          200-207
```

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Platform Notes (Continued)

```
   NUMA node26 CPU(s):                   208-215
   NUMA node27 CPU(s):                   216-223
   NUMA node28 CPU(s):                   224-231
   NUMA node29 CPU(s):                   232-239
   NUMA node30 CPU(s):                   240-247
   NUMA node31 CPU(s):                   248-255
   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; PBRSB-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:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
      L1d       32K       8M    8 Data            1    64        1             64
      L1i       32K       8M    8 Instruction     1    64        1             64
      L2         1M     256M    8 Unified         2  2048        1             64
      L3        16M     512M   16 Unified         3 16384        1             64

 ------------------------------------------------------------
 8. numactl --hardware
 NOTE: a numactl 'node' might or might not correspond to a physical chip.
   available: 32 nodes (0-31)
   node 0 cpus: 0-7
   node 0 size: 96449 MB
   node 0 free: 95942 MB
   node 1 cpus: 8-15
   node 1 size: 96765 MB
   node 1 free: 96646 MB
   node 2 cpus: 16-23
   node 2 size: 96765 MB
   node 2 free: 96637 MB
   node 3 cpus: 24-31
   node 3 size: 96765 MB
   node 3 free: 96664 MB
   node 4 cpus: 32-39
```

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Platform Notes (Continued)

```
node 4 size: 96765 MB
node 4 free: 96629 MB
node 5 cpus: 40-47
node 5 size: 96765 MB
node 5 free: 96646 MB
node 6 cpus: 48-55
node 6 size: 96765 MB
node 6 free: 96623 MB
node 7 cpus: 56-63
node 7 size: 96765 MB
node 7 free: 96606 MB
node 8 cpus: 64-71
node 8 size: 96765 MB
node 8 free: 96593 MB
node 9 cpus: 72-79
node 9 size: 96765 MB
node 9 free: 96645 MB
node 10 cpus: 80-87
node 10 size: 96765 MB
node 10 free: 96620 MB
node 11 cpus: 88-95
node 11 size: 96765 MB
node 11 free: 96599 MB
node 12 cpus: 96-103
node 12 size: 96765 MB
node 12 free: 96615 MB
node 13 cpus: 104-111
node 13 size: 96765 MB
node 13 free: 96618 MB
node 14 cpus: 112-119
node 14 size: 96765 MB
node 14 free: 96651 MB
node 15 cpus: 120-127
node 15 size: 96765 MB
node 15 free: 96650 MB
node 16 cpus: 128-135
node 16 size: 96721 MB
node 16 free: 96587 MB
node 17 cpus: 136-143
node 17 size: 96765 MB
node 17 free: 96643 MB
node 18 cpus: 144-151
node 18 size: 96765 MB
node 18 free: 96650 MB
node 19 cpus: 152-159
node 19 size: 96765 MB
node 19 free: 96640 MB
```

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Platform Notes (Continued)

```
  node 20 cpus: 160-167
  node 20 size: 96765 MB
  node 20 free: 96670 MB
  node 21 cpus: 168-175
  node 21 size: 96765 MB
  node 21 free: 96656 MB
  node 22 cpus: 176-183
  node 22 size: 96765 MB
  node 22 free: 96639 MB
  node 23 cpus: 184-191
  node 23 size: 96765 MB
  node 23 free: 96647 MB
  node 24 cpus: 192-199
  node 24 size: 96765 MB
  node 24 free: 96659 MB
  node 25 cpus: 200-207
  node 25 size: 96765 MB
  node 25 free: 96649 MB
  node 26 cpus: 208-215
  node 26 size: 96765 MB
  node 26 free: 96653 MB
  node 27 cpus: 216-223
  node 27 size: 96699 MB
  node 27 free: 96597 MB
  node 28 cpus: 224-231
  node 28 size: 96765 MB
  node 28 free: 96657 MB
  node 29 cpus: 232-239
  node 29 size: 96765 MB
  node 29 free: 96645 MB
  node 30 cpus: 240-247
  node 30 size: 96765 MB
  node 30 free: 96668 MB
  node 31 cpus: 248-255
  node 31 size: 96765 MB
  node 31 free: 96630 MB
  node distances:
 node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24
  25  26  27  28  29  30  31
   0:  10  11  11  11  11  11  11  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
    32  32  32  32  32  32  32
   1:  11  10  11  11  11  11  11  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
    32  32  32  32  32  32  32
   2:  11  11  10  11  11  11  11  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
    32  32  32  32  32  32  32
   3:  11  11  11  10  11  11  11  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
    32  32  32  32  32  32  32
```

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Platform Notes (Continued)

```
 4:  11  11  11  11  10  11  11  11  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
 5:  11  11  11  11  11  10  11  11  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
 6:  11  11  11  11  11  11  10  11  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
 7:  11  11  11  11  11  11  11  10  11  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
 8:  11  11  11  11  11  11  11  11  10  11  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
 9:  11  11  11  11  11  11  11  11  11  10  11  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
10:  11  11  11  11  11  11  11  11  11  11  10  11  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
11:  11  11  11  11  11  11  11  11  11  11  11  10  11  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
12:  11  11  11  11  11  11  11  11  11  11  11  11  10  11  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
13:  11  11  11  11  11  11  11  11  11  11  11  11  11  10  11  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
14:  11  11  11  11  11  11  11  11  11  11  11  11  11  11  10  11  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
15:  11  11  11  11  11  11  11  11  11  11  11  11  11  11  11  10  11  32  32  32  32  32  32  32  32  32
  32  32  32  32  32  32  32
16:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  10  11  11  11  11  11  11  11  11
  11  11  11  11  11  11  11
17:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  10  11  11  11  11  11  11  11
  11  11  11  11  11  11  11
18:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  10  11  11  11  11  11  11
  11  11  11  11  11  11  11
19:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  10  11  11  11  11  11
  11  11  11  11  11  11  11
20:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  10  11  11  11  11
  11  11  11  11  11  11  11
21:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  10  11  11  11
  11  11  11  11  11  11  11
22:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  10  11  11
  11  11  11  11  11  11  11
23:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  10  11
  11  11  11  11  11  11  11
24:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  10
  11  11  11  11  11  11  11
25:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  11
  10  11  11  11  11  11  11
26:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  11
  11  10  11  11  11  11  11
27:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  11
```

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Platform Notes (Continued)

```
    11  11  10  11  11  11  11
   28:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  11
    11  11  11  10  11  11  11
   29:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  11
    11  11  11  11  10  11  11
   30:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  11
    11  11  11  11  11  10  11
   31:  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  32  11  11  11  11  11  11  11  11  11
    11  11  11  11  11  11  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       3170363732 kB

------------------------------------------------------------
10. who -r
  run-level 5 Feb 8 20:20

------------------------------------------------------------
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 apport 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-sysext
                     systemd-time-wait-sync systemd-timesyncd upower
  indirect           systemd-sysupdate systemd-sysupdate-reboot uuidd
  masked           cryptdisks cryptdisks-early hwclock multipath-tools-boot screen-cleanup sudo x11-common

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.8.0-94-generic
  root=UUID=60685607-d408-4b5d-9478-a6a431e11442
```

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Platform Notes (Continued)

```
  ro

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 12:
    current policy: frequency should be within 1.50 GHz and 2.25 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes
      Boost States: 0
      Total States: 3
      Pstate-P0:  2250MHz

------------------------------------------------------------
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
  defrag          [always] defer defer+madvise madvise never
  enabled         [always] madvise never
  hpage_pmd_size  2097152
  shmem_enabled   always within_size advise [never] deny force
```

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Platform Notes (Continued)

```
------------------------------------------------------------
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/sda2      ext4  439G   60G  356G  15% /

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         HPE
    Product:        ProLiant DL385 Gen11
    Product Family: ProLiant
    Serial:         DL385G11-006

------------------------------------------------------------
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:
     5x Hynix HMCT04MEERA129N 128 GB 4 rank 4800
     3x Hynix HMCT04MEERA131N 128 GB 4 rank 4800
     11x Hynix HMCT04MEERA133N 128 GB 4 rank 4800
     5x Hynix HMCT04MEERA135N 128 GB 4 rank 4800


------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       HPE
   BIOS Version:      2.90
```

(Continued on next page)

Platform Notes (Continued)

```
    BIOS Date:          01/09/2026
    BIOS Revision:      2.90
    Firmware Revision: 1.66
```

Compiler Version Notes

```
==============================================================================
C       | 811.tealeaf_s(base) 816.nab_s(base) 881.neutron_s(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++     | 803.sph_exa_s(base) 857.namd_s(base) 867.nest_s(base)
        | 872.marian_s(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  | 809.cactus_s(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 | 800.pot3d_s(base) 820.cloverleaf_s(base) 822.palm_s(base)
        | 849.fotonik3d_s(base) 865.roms_s(base)
------------------------------------------------------------------------------
flang version 22.1.0-rc2 (https://github.com/llvm/llvm-project
  a47b42eb9f9b302167b4fc413e6c92798d65dd0b)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/llvm/llvm-22.1.0-rc2/install/bin
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang-22

Benchmarks using both C and C++:
clang++ clang

Base Portability Flags

800.pot3d_s: -DSPEC_LP64
803.sph_exa_s: -DSPEC_LP64
809.cactus_s: -DSPEC_LP64
811.tealeaf_s: -DSPEC_LP64
816.nab_s: -DSPEC_LP64
820.cloverleaf_s: -DSPEC_LP64
822.palm_s: -DSPEC_LP64
849.fotonik3d_s: -DSPEC_LP64
857.namd_s: -DSPEC_LP64
865.roms_s: -DSPEC_LP64
867.nest_s: -fno-finite-math-only -DSPEC_LP64
872.marian_s: -DSPEC_LP64
881.neutron_s: -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 -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50 -zopt
-mrecip=none -fopenmp -DSPEC_OPENMP -lamdalloc -lamdlibm
-fopenmp=libomp -lomp

C++ benchmarks:
-m64 -std=c++17 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -flto -march=znver5

(Continued on next page)

Base Optimization Flags (Continued)

C++ benchmarks (continued):
-fveclib=AMDLIBM -ffast-math -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt -fopenmp -DSPEC_OPENMP
-pthread -lamdalloc -lamdlibm -fopenmp=libomp -lomp

Fortran benchmarks:
-m64 -std=f2018 -O3 -flto -march=znver5 -fveclib=AMDLIBM
-ffast-math -funroll-loops -DSPEC_OPENMP -fopenmp
-fdo-concurrent-to-openmp=host -lamdalloc -lamdlibm -fopenmp=libomp
-lomp

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 -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50 -zopt
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000
-mrecip=none -fopenmp -DSPEC_OPENMP -pthread -lamdalloc -lamdlibm
-fopenmp=libomp -lomp

Base Other Flags

C benchmarks:
-Wno-return-type -Wno-unused-command-line-argument

Benchmarks using both C and C++:
-Wno-return-type -Wno-unused-command-line-argument

Peak Optimization Flags

C benchmarks:

811.tealeaf_s: basepeak = yes

816.nab_s: basepeak = yes

881.neutron_s: basepeak = yes

C++ benchmarks:

(Continued on next page)

Peak Optimization Flags (Continued)

803.sph_exa_s: `basepeak = yes`

857.namd_s: `basepeak = yes`

867.nest_s: `basepeak = yes`

872.marian_s: `basepeak = yes`

Fortran benchmarks:

800.pot3d_s: `basepeak = yes`

820.cloverleaf_s: `basepeak = yes`

822.palm_s: `basepeak = yes`

849.fotonik3d_s: `basepeak = yes`

865.roms_s: `basepeak = yes`

Benchmarks using both C and C++:

809.cactus_s: `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.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.xml

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