



SPEC CPU®2026 Integer Speed Result

Copyright 2026 Standard Performance Evaluation Corporation

Hewlett Packard Enterprise

(Test Sponsor: HPE)

ProLiant DL365 Gen11

(2.10 GHz, AMD EPYC 9845)

SPECspeed®2026_int_base = 7.42

SPECspeed®2026_int_peak = 7.73

CPU2026 License: 3

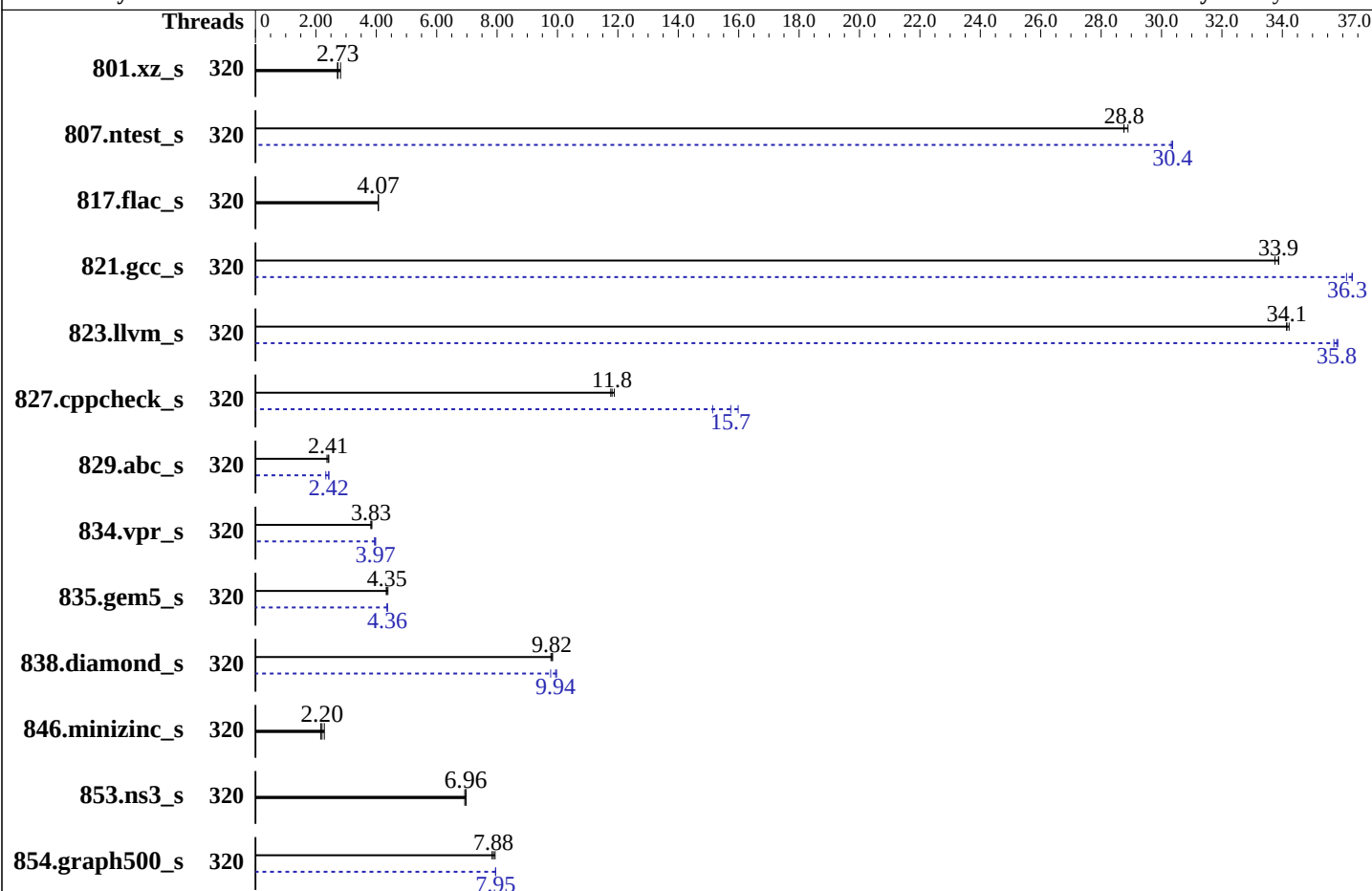
Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2026

Hardware Availability: Oct-2024

Software Availability: May-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++: Version 5.2.0 of AOCC
Fortran: Flang v22
Compiler Category: Vendor
Firmware: HPE BIOS Version v3.22 08/20/2026
released Aug-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						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
801.xz_s	320	210	2.82	218	2.71	<u>217</u>	<u>2.73</u>	320	210	2.82	218	2.71	<u>217</u>	<u>2.73</u>
807.ntest_s	320	39.5	28.9	<u>39.6</u>	<u>28.8</u>	39.6	28.8	320	37.6	30.3	37.5	30.4	<u>37.5</u>	<u>30.4</u>
817.flac_s	320	427	4.07	427	4.07	<u>427</u>	<u>4.07</u>	320	427	4.07	427	4.07	<u>427</u>	<u>4.07</u>
821.gcc_s	320	<u>61.1</u>	<u>33.9</u>	61.1	33.9	61.3	33.8	320	<u>57.0</u>	<u>36.3</u>	57.0	36.3	57.3	36.1
823.llvm_s	320	41.2	34.2	<u>41.3</u>	<u>34.1</u>	41.3	34.1	320	39.4	35.8	39.5	35.7	<u>39.4</u>	<u>35.8</u>
827.cppcheck_s	320	95.1	11.8	<u>94.8</u>	<u>11.8</u>	94.2	11.9	320	70.0	16.0	73.9	15.1	<u>71.1</u>	<u>15.7</u>
829.abc_s	320	342	2.43	351	2.37	<u>345</u>	<u>2.41</u>	320	357	2.33	342	2.43	<u>343</u>	<u>2.42</u>
834.vpr_s	320	250	3.82	<u>249</u>	<u>3.83</u>	247	3.86	320	242	3.94	240	3.98	<u>240</u>	<u>3.97</u>
835.gem5_s	320	<u>262</u>	<u>4.35</u>	263	4.33	260	4.39	320	<u>261</u>	<u>4.36</u>	261	4.36	261	4.37
838.diamond_s	320	102	9.84	<u>102</u>	<u>9.82</u>	102	9.78	320	100	9.97	102	9.77	<u>101</u>	<u>9.94</u>
846.minizinc_s	320	<u>304</u>	<u>2.20</u>	294	2.28	310	2.16	320	<u>304</u>	<u>2.20</u>	294	2.28	310	2.16
853.ns3_s	320	<u>166</u>	<u>6.96</u>	166	6.93	165	6.97	320	<u>166</u>	<u>6.96</u>	166	6.93	165	6.97
854.graph500_s	320	77.0	7.93	78.0	7.83	<u>77.5</u>	<u>7.88</u>	320	76.8	7.96	76.9	7.95	<u>76.8</u>	<u>7.95</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/>

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 --physcpubind=0-15 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)



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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 = "0-319"
LD_LIBRARY_PATH =
"/home/cpu2026/amd_speed_aocc520_znver5_A_lib/lib:/home/cpu2026/amd_speed_aocc520_znver5_A_lib/lib32:"
MALLOCONF = "retain:true"
OMP_THREAD_LIMIT = "320"

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
Last-Level Cache (LLC) as NUMA Node set to Enabled
AMD SMT Option set to Disabled
Thermal Configuration set to Maximum Cooling

Sysinfo program /home/cpu2026/bin/sysinfo
Rev: 779ab21020787073335a329f3a45e2cd
running on localhost Sun Sep 13 05:20:00 2026

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Platform Notes (Continued)

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

Table of contents

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3. Username
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5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
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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
05:20:00 up 2 min, 4 users, load average: 0.20, 0.30, 0.13
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT

3. Username
From environment variable \$USER: root

4. ulimit -a
core file size (blocks, -c) 0
data seg size (kbytes, -d) unlimited

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Platform Notes (Continued)

```
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_intspeed_sh.sh
sudo ./run_intspeed.py
python3 ./run_intspeed.py
runcpu --config amd_speed_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 intspeed
runcpu --configfile amd_speed_aocc520_znver5_A1.cfg --tune all --reportable --iterations 3 --nopower
--runmode speed --tune base:peak --size test:train:refspeed intspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2026.001/templogs/preenv.intspeed.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2026
```

6. /proc/cpuinfo

```
model name      : AMD EPYC 9845 160-Core Processor
vendor_id       : AuthenticAMD
cpu family      : 26
model           : 17
stepping        : 0
microcode       : 0xb101066
bugs            : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass srso
TLB size        : 192 4K pages
cpu cores       : 160
siblings        : 160
2 physical ids  (chips)
320 processors  (hardware threads)
physical id 0:   core ids 0-159
physical id 1:   core ids 0-159
```

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Platform Notes (Continued)

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: 4193.40

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 bpext perfctr_llc mwaitx cpb
cat_l3 cdp_l3 hw_pstate ssbd mba perfmon_v2 ibrs ibpb stibp
ibrs_enhanced vmmcall fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms
invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma
clflushopt clwb avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec
xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local
user_shstk avx_vnni avx512_bf16 clzero irperf xsaveerptr rdpru
wbnoinvd amd_ppin cppc 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 fsrm
avx512_vp2intersect flush_l1d debug_swap hv_inuse_wr_allowed
srso_user_kernel_no amd_lbr_pmc_freeze

Virtualization:

AMD-V

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Platform Notes (Continued)

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):	20
NUMA node0 CPU(s):	0-15
NUMA node1 CPU(s):	16-31
NUMA node2 CPU(s):	32-47
NUMA node3 CPU(s):	48-63
NUMA node4 CPU(s):	64-79
NUMA node5 CPU(s):	80-95
NUMA node6 CPU(s):	96-111
NUMA node7 CPU(s):	112-127
NUMA node8 CPU(s):	128-143
NUMA node9 CPU(s):	144-159
NUMA node10 CPU(s):	160-175
NUMA node11 CPU(s):	176-191
NUMA node12 CPU(s):	192-207
NUMA node13 CPU(s):	208-223
NUMA node14 CPU(s):	224-239
NUMA node15 CPU(s):	240-255
NUMA node16 CPU(s):	256-271
NUMA node17 CPU(s):	272-287
NUMA node18 CPU(s):	288-303
NUMA node19 CPU(s):	304-319
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; PBRSS-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

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Platform Notes (Continued)

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: 20 nodes (0-19)

node 0 cpus: 0-15
node 0 size: 77030 MB
node 0 free: 76765 MB
node 1 cpus: 16-31
node 1 size: 77409 MB
node 1 free: 77215 MB
node 2 cpus: 32-47
node 2 size: 77373 MB
node 2 free: 77197 MB
node 3 cpus: 48-63
node 3 size: 77409 MB
node 3 free: 77241 MB
node 4 cpus: 64-79
node 4 size: 77411 MB
node 4 free: 77174 MB
node 5 cpus: 80-95
node 5 size: 77411 MB
node 5 free: 77228 MB
node 6 cpus: 96-111
node 6 size: 77409 MB
node 6 free: 77209 MB
node 7 cpus: 112-127
node 7 size: 77411 MB
node 7 free: 77216 MB
node 8 cpus: 128-143
node 8 size: 77411 MB
node 8 free: 77082 MB
node 9 cpus: 144-159
node 9 size: 77403 MB
node 9 free: 77159 MB
node 10 cpus: 160-175
node 10 size: 77409 MB
node 10 free: 77168 MB
node 11 cpus: 176-191
node 11 size: 77409 MB
node 11 free: 77204 MB
node 12 cpus: 192-207
node 12 size: 77411 MB
node 12 free: 77209 MB
node 13 cpus: 208-223

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```
node 13 size: 77409 MB
node 13 free: 77154 MB
node 14 cpus: 224-239
node 14 size: 77411 MB
node 14 free: 77227 MB
node 15 cpus: 240-255
node 15 size: 77411 MB
node 15 free: 77195 MB
node 16 cpus: 256-271
node 16 size: 77409 MB
node 16 free: 77098 MB
node 17 cpus: 272-287
node 17 size: 77411 MB
node 17 free: 77242 MB
node 18 cpus: 288-303
node 18 size: 77411 MB
node 18 free: 77213 MB
node 19 cpus: 304-319
node 19 size: 77240 MB
node 19 free: 76988 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19
0:  10 11 11 11 11 11 11 11 11 11 32 32 32 32 32 32 32 32 32 32
1:  11 10 11 11 11 11 11 11 11 11 32 32 32 32 32 32 32 32 32 32
2:  11 11 10 11 11 11 11 11 11 11 32 32 32 32 32 32 32 32 32 32
3:  11 11 11 10 11 11 11 11 11 11 32 32 32 32 32 32 32 32 32 32
4:  11 11 11 11 10 11 11 11 11 11 32 32 32 32 32 32 32 32 32 32
5:  11 11 11 11 11 10 11 11 11 11 32 32 32 32 32 32 32 32 32 32
6:  11 11 11 11 11 11 10 11 11 11 32 32 32 32 32 32 32 32 32 32
7:  11 11 11 11 11 11 11 10 11 11 32 32 32 32 32 32 32 32 32 32
8:  11 11 11 11 11 11 11 11 10 11 32 32 32 32 32 32 32 32 32 32
9:  11 11 11 11 11 11 11 11 11 10 32 32 32 32 32 32 32 32 32 32
10: 32 32 32 32 32 32 32 32 32 32 10 11 11 11 11 11 11 11 11 11
11: 32 32 32 32 32 32 32 32 32 32 11 10 11 11 11 11 11 11 11 11
12: 32 32 32 32 32 32 32 32 32 32 11 11 10 11 11 11 11 11 11 11
13: 32 32 32 32 32 32 32 32 32 32 11 11 11 10 11 11 11 11 11 11
14: 32 32 32 32 32 32 32 32 32 32 11 11 11 11 10 11 11 11 11 11
15: 32 32 32 32 32 32 32 32 32 32 11 11 11 11 11 10 11 11 11 11
16: 32 32 32 32 32 32 32 32 32 32 11 11 11 11 11 11 10 11 11 11
17: 32 32 32 32 32 32 32 32 32 32 11 11 11 11 11 11 11 10 11 11
18: 32 32 32 32 32 32 32 32 32 32 11 11 11 11 11 11 11 11 10 11
19: 32 32 32 32 32 32 32 32 32 32 11 11 11 11 11 11 11 11 11 10
```

9. /proc/meminfo
MemTotal: 1584761744 kB

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Platform Notes (Continued)

10. who -r
run-level 3 Sep 13 05:17

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 nscd 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-dispatcherd systemd-boot-check-no-failures systemd-confext
systemd-network-generator systemd-sysextd systemd-time-wait-sync systemd-timesyncd tuned
udisks2 update-system-flatpaks upower vncserver@ wpa_supplicant@
indirect pcsd saned@ systemd-userdbd wickedd

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.53.6-default
root=UUID=6864fa16-4e3a-4b5d-82dd-678b06e3a35e
splash=silent
mitigations=auto
quiet
security=apparmor

14. cpupower frequency-info
analyzing CPU 76:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes

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Platform Notes (Continued)

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

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

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
------------	------	------	------	-------	------	------------

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Platform Notes (Continued)

/dev/sda2 btrfs 447G 36G 408G 8% /home

20. /sys/devices/virtual/dmi/id
Vendor: HPE
Product: ProLiant DL365 Gen11
Product Family: ProLiant
Serial: DL365G11-001

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:
8x Hynix HMG94AHBRA480N 64 GB 2 rank 6400
1x Micron MTC40F2046S1RC64BD2 MWFF 64 GB 2 rank 6400
15x Micron MTC40F2046S1RC64BD2 QSFF 64 GB 2 rank 6400

22. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: HPE
BIOS Version: 3.22
BIOS Date: 08/20/2026
BIOS Revision: 3.22
Firmware Revision: 1.79

Compiler Version Notes

C | 854.graph500_s(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.2.0-Build#2035 2026_04_10)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.2.0-4925-2035/bin

C++ | 807.ntest_s(base, peak) 827.cppcheck_s(base, peak) 853.ns3_s(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.2.0-Build#2035 2026_04_10)

(Continued on next page)



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CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2026

Hardware Availability: Oct-2024

Software Availability: May-2026

Compiler Version Notes (Continued)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.2.0-4925-2035/bin

```
=====  
C++, C | 801.xz_s(base, peak) 817.flac_s(base, peak) 821.gcc_s(base, peak)  
      | 823.llvm_s(base, peak) 829.abc_s(base, peak) 834.vpr_s(base, peak)  
      | 835.gem5_s(base, peak) 838.diamond_s(base, peak)  
      | 846.minizinc_s(base, peak)  
=====
```

AMD clang version 17.0.6 (CLANG: AOCC_5.2.0-Build#2035 2026_04_10)

Target: x86_64-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.2.0-4925-2035/bin

Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Benchmarks using both C and C++:

clang++ clang

Base Portability Flags

```
801.xz_s: -DSPEC_LP64  
807.ntest_s: -DSPEC_LP64  
817.flac_s: -DSPEC_LP64  
821.gcc_s: -DSPEC_LP64  
823.llvm_s: -DSPEC_LP64  
827.cppcheck_s: -DSPEC_LP64  
829.abc_s: -DSPEC_LP64  
834.vpr_s: -fno-finite-math-only -DSPEC_LP64  
835.gem5_s: -fno-finite-math-only -DSPEC_LP64  
838.diamond_s: -DSPEC_LP64  
846.minizinc_s: -DSPEC_LP64  
853.ns3_s: -fno-finite-math-only -DSPEC_LP64  
854.graph500_s: -DSPEC_LP64
```



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CPU2026 License: 3

Test Sponsor: HPE

Tested by: HPE

Test Date: Sep-2026

Hardware Availability: Oct-2024

Software Availability: May-2026

Base Optimization Flags

C benchmarks:

```
-m64 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Wl,-mllvm -Wl,-extra-inliner -O3 -flto
-march=znver5 -fveclib=AMDLIBM -ffast-math -zopt -fremap-arrays
-fstrip-mining -fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50
-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
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -zopt -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -fopenmp -DSPEC_OPENMP
-fvirtual-function-elimination -fvisibility=hidden -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
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -flto -march=znver5
-fveclib=AMDLIBM -ffast-math -zopt -fremap-arrays -fstrip-mining
-fstruct-layout=7 -mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -mllvm -unroll-threshold=50
-mllvm -unroll-threshold=100 -mllvm -loop-unswitch-threshold=200000
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp -lomp
```

Base Other Flags

C benchmarks:

-Wno-return-type

Benchmarks using both C and C++:

-Wno-return-type

Peak Compiler Invocation

C benchmarks:

clang

(Continued on next page)



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Peak Compiler Invocation (Continued)

C++ benchmarks:

clang++

Benchmarks using both C and C++:

clang++ clang

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

-m64 -std=c18 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-allow-multiple-definition -Wl,-mllvm -Wl,-extra-inliner -Ofast
-flto -march=znver5 -fveclib=AMDLIBM -ffast-math -zopt
-fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000 -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -fopenmp -DSPEC_OPENMP -lamdalloc
-lamdlibm -fopenmp=libomp -lomp

C++ benchmarks:

807.ntest_s: -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
-fprofile-instr-generate(pass 1) -fprofile-instr-use(pass 2)
-Ofast -flto -march=znver5 -fveclib=AMDLIBM -ffast-math
-zopt -mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=100 -fopenmp -DSPEC_OPENMP
-fvirtual-function-elimination -fvisibility=hidden
-lamdalloc -lamdlibm -fopenmp=libomp -lomp

827.cppcheck_s: Same as 807.ntest_s

853.ns3_s: basepeak = yes

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Software Availability: May-2026

Peak Optimization Flags (Continued)

Benchmarks using both C and C++:

801.xz_s: basepeak = yes

817.flac_s: basepeak = yes

821.gcc_s: -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
-fprofile-instr-generate(pass 1) -fprofile-instr-use(pass 2)
-Ofast -flto -march=znver5 -fveclib=AMDLIBM -ffast-math
-zopt -fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -mllvm -unroll-threshold=100
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp
-lomp

823.llvm_s: Same as 821.gcc_s

829.abc_s: Same as 821.gcc_s

834.vpr_s: Same as 821.gcc_s

835.gem5_s: -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 -Ofast -flto
-march=znver5 -fveclib=AMDLIBM -ffast-math -zopt
-fremap-arrays -fstrip-mining -fstruct-layout=7
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3
-mllvm -unroll-threshold=50 -mllvm -unroll-threshold=100
-fopenmp -DSPEC_OPENMP -fvirtual-function-elimination
-fvisibility=hidden -lamdalloc -lamdlibm -fopenmp=libomp
-lomp

838.diamond_s: Same as 821.gcc_s

846.minizinc_s: basepeak = yes



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Peak Other Flags

C benchmarks:

-Wno-return-type

Benchmarks using both C and C++:

-Wno-return-type

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

<http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-10-07.00.html>

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

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

<http://www.spec.org/cpu2026/results/flags/aocc-flags.2026-10-07.00.xml>

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

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