



SPEC CPU®2017 Integer Rate Result

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Dell Inc.

SPECrate®2017_int_base = 700

PowerEdge R6725 (AMD EPYC 9255 24-Core Processor)

SPECrate®2017_int_peak = 713

CPU2017 License: 6573

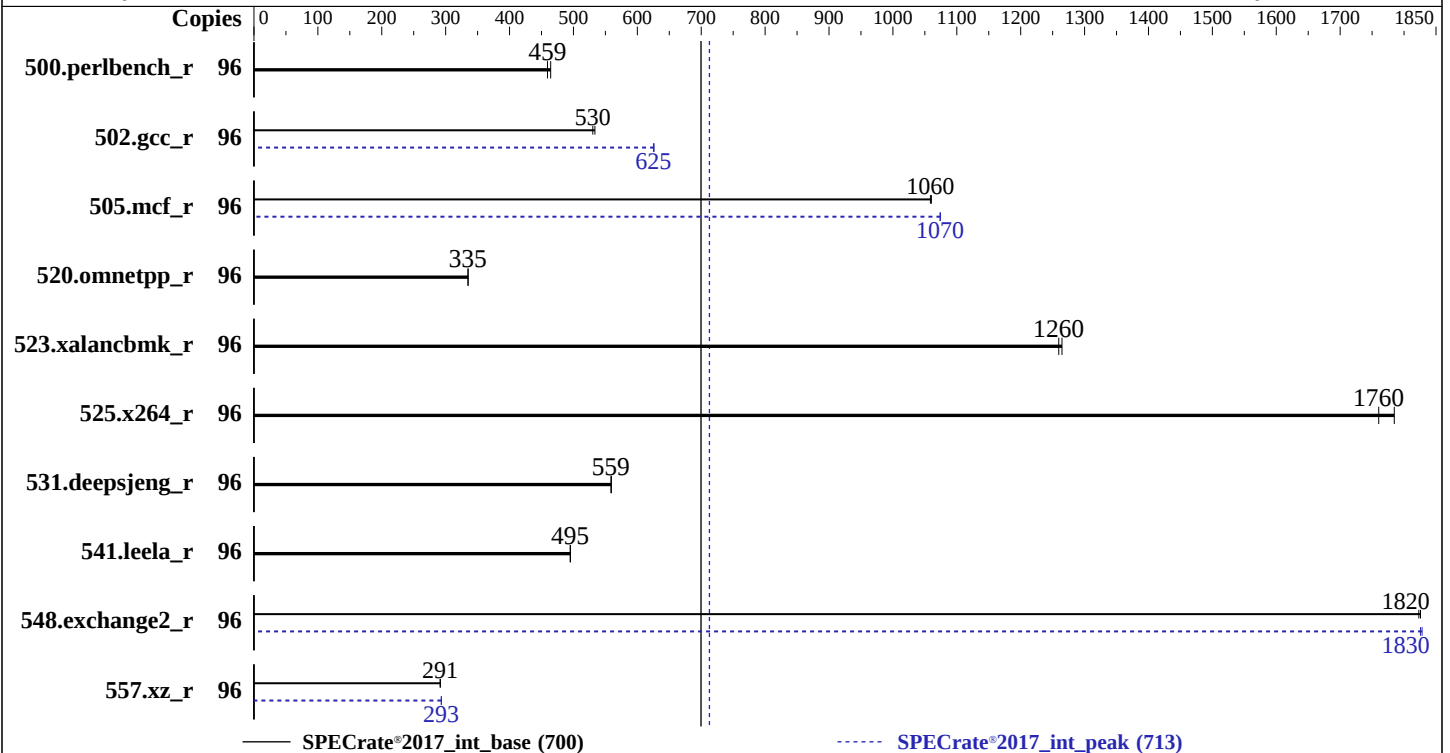
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2025

Hardware Availability: Mar-2025

Software Availability: Mar-2025



Hardware

CPU Name: AMD EPYC 9255
Max MHz: 4300
Nominal: 3200
Enabled: 48 cores, 2 chips, 2 threads/core
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: 128 MB I+D on chip per chip, 32 MB shared / 6 cores
Other: None
Memory: 768 GB (24 x 32 GB 2Rx8 PC5-6400B-R)
Storage: 70 GB on tmpfs
Other: CPU Cooling: Air

Software

OS: Ubuntu 24.04 LTS
6.8.0-58-generic
Compiler: C/C++/Fortran: Version 5.0.0 of AOCC
Parallel: No
Firmware: Version 1.1.3 released Feb-2025
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-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
500.perlbench_r	96	333	459	329	464			96	333	459	329	464		
502.gcc_r	96	255	534	256	530			96	217	625	217	626		
505.mcf_r	96	146	1060	147	1060			96	144	1070	144	1070		
520.omnetpp_r	96	376	335	376	335			96	376	335	376	335		
523.xalancbmk_r	96	80.2	1260	80.5	1260			96	80.2	1260	80.5	1260		
525.x264_r	96	95.5	1760	94.2	1780			96	95.5	1760	94.2	1780		
531.deepsjeng_r	96	197	559	197	559			96	197	559	197	559		
541.leela_r	96	321	495	321	495			96	321	495	321	495		
548.exchange2_r	96	138	1820	138	1830			96	138	1830	138	1830		
557.xz_r	96	356	291	355	292			96	354	293	353	293		

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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.
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.



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Environment Variables Notes

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

LD_LIBRARY_PATH =

"/mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5_A1.3/amd_rate_aocc500_znver5_A_lib/lib:/mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5_A1.3/amd_rate_aocc500_znver5_A_lib/lib32:"

MALLOC_CONF = "retain:true"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 9174F CPU + 1.5TiB Memory using RHEL 8.6

Benchmark run from a 70 GB ramdisk created with the cmd: "mount -t tmpfs -o size=70G tmpfs /mnt/ramdisk"

Platform Notes

BIOS Settings:

Virtualization Technology : Disabled
NUMA Nodes Per Socket : 4

System Profile : Custom
C-States : Disabled
Memory Patrol Scrub : Disabled
PCI ASPM L1 Link Power Management : Disabled
Periodic Directory Rinse Tuning : Blended
Determinism Control : Manual
Determinism Slider : Power Determinism
Optimizer Mode : Enabled
Adaptive Allocation : Enabled
Dram Refresh Delay : Performance
DIMM Self Healing -
on Uncorrectable Memory Error : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5_A1.3/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on 1234567-R6725 Sun Apr 27 19:12:49 2025

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

Table of contents

1. uname -a
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. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. sysctl

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Platform Notes (Continued)

```
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 -a
Linux 1234567-R6725 6.8.0-58-generic #60-Ubuntu SMP PREEMPT_DYNAMIC Fri Mar 14 18:29:48 UTC 2025 x86_64
x86_64 x86_64 GNU/Linux
```

```
2. w
19:12:49 up 4 min, 1 user, load average: 0.29, 0.14, 0.05
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root tty1 - 19:10 25.00s 1.35s 0.39s /bin/bash ./amd_rate_aocc500_znver5_A1.sh
```

```
3. Username
From environment variable $USER: root
```

```
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 3092809
nofiles 1024
vmemory(kbytes) unlimited
locks unlimited
rtprio 0
```

```
5. sysinfo process ancestry
/sbin/init
/bin/login -p --
-bash
/bin/bash ./DELL_rate.sh
/bin/bash /home/DellFiles/bin/dell-run-main.sh rate
/bin/bash /home/DellFiles/bin/dell-run-main.sh rate
/bin/bash /home/DellFiles/bin/AMD/dell-run-speccpu.sh rate --define DL-VERS=6.2 --output_format html,pdf,txt
python3 ./run_amd_rate_aocc500_znver5_A1.py
/bin/bash ./amd_rate_aocc500_znver5_A1.sh
runcpu --config amd_rate_aocc500_znver5_A1.cfg --tune all --reportable --iterations 2 --define
DL-BIOS-L3NUMA=1 --define DL-BIOS-NPS=4 --define DL-VERS=6.2 --output_format html,pdf,txt intrate
runcpu --configfile amd_rate_aocc500_znver5_A1.cfg --tune all --reportable --iterations 2 --define
DL-BIOS-L3NUMA=1 --define DL-BIOS-NPS=4 --define DL-VERS=6.2 --output_format html,pdf,txt --nopower
--runmode rate --tune base:peak --size test:train:refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.001/temlogs/preenv.intrate.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5_A1.3
```

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Platform Notes (Continued)

```
6. /proc/cpuinfo
model name      : AMD EPYC 9255 24-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 26
model          : 2
stepping       : 1
microcode      : 0xb00211e
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size       : 192 4K pages
cpu cores      : 24
siblings       : 48
2 physical ids (chips)
96 processors (hardware threads)
physical id 0: core ids 0-5,8-13,16-21,24-29
physical id 1: core ids 0-5,8-13,16-21,24-29
physical id 0: apicids 0-11,16-27,32-43,48-59
physical id 1: apicids 64-75,80-91,96-107,112-123
```

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:	AMD
Model name:	AMD EPYC 9255 24-Core Processor
BIOS Model name:	AMD EPYC 9255 24-Core Processor
BIOS CPU family:	107
CPU family:	26
Model:	2
Thread(s) per core:	2
Core(s) per socket:	24
Socket(s):	2
Stepping:	1
Frequency boost:	enabled
CPU(s) scaling MHz:	37%
CPU max MHz:	4315.6250
CPU min MHz:	1500.0000
BogoMIPS:	6391.54
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 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm cmp_legacy 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 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 rdprr wbnoinvd amd_ppin cppc amd_ibpb_ret arat npt lbrv

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Platform Notes (Continued)

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 avx512_vp2intersect
flush_lld debug_swap
L1d cache: 2.3 MiB (48 instances)
L1i cache: 1.5 MiB (48 instances)
L2 cache: 48 MiB (48 instances)
L3 cache: 256 MiB (8 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-5,48-53
NUMA node1 CPU(s): 6-11,54-59
NUMA node2 CPU(s): 12-17,60-65
NUMA node3 CPU(s): 18-23,66-71
NUMA node4 CPU(s): 24-29,72-77
NUMA node5 CPU(s): 30-35,78-83
NUMA node6 CPU(s): 36-41,84-89
NUMA node7 CPU(s): 42-47,90-95
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: Not affected
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
always-on; RSB filling; PBRBSB-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	2.3M	12	Data	1	64	1	64
L1i	32K	1.5M	8	Instruction	1	64	1	64
L2	1M	48M	16	Unified	2	1024	1	64
L3	32M	256M	16	Unified	3	32768	1	64

8. numactl --hardware

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

available: 8 nodes (0-7)
node 0 cpus: 0-5,48-53
node 0 size: 96037 MB
node 0 free: 95430 MB
node 1 cpus: 6-11,54-59
node 1 size: 96762 MB
node 1 free: 96030 MB
node 2 cpus: 12-17,60-65
node 2 size: 96762 MB
node 2 free: 96410 MB
node 3 cpus: 18-23,66-71
node 3 size: 96703 MB
node 3 free: 91855 MB
node 4 cpus: 24-29,72-77
node 4 size: 96762 MB

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Platform Notes (Continued)

```
node 4 free: 96423 MB
node 5 cpus: 30-35,78-83
node 5 size: 96762 MB
node 5 free: 96400 MB
node 6 cpus: 36-41,84-89
node 6 size: 96762 MB
node 6 free: 96440 MB
node 7 cpus: 42-47,90-95
node 7 size: 96728 MB
node 7 free: 96385 MB
node distances:
node   0   1   2   3   4   5   6   7
  0:  10  12  12  12  32  32  32  32
  1:  12  10  12  12  32  32  32  32
  2:  12  12  10  12  32  32  32  32
  3:  12  12  12  10  32  32  32  32
  4:  32  32  32  32  10  12  12  12
  5:  32  32  32  32  12  10  12  12
  6:  32  32  32  32  12  12  10  12
  7:  32  32  32  32  12  12  12  10
```

```
9. /proc/meminfo
MemTotal:      791841772 kB
```

```
10. who -r
run-level 3 Apr 27 19:10 last=5
```

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

```
12. Failed units, from systemctl list-units --state=failed
UNIT                                LOAD    ACTIVE SUB    DESCRIPTION
* systemd-networkd-wait-online.service loaded failed failed Wait for Network to be Configured
Legend: LOAD    -> Reflects whether the unit definition was properly loaded.
          ACTIVE -> The high-level unit activation state, i.e. generalization of SUB.
          SUB    -> The low-level unit activation state, values depend on unit type.
1 loaded units listed.
```

```
13. Services, from systemctl list-unit-files
STATE    UNIT FILES
enabled  ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online
accounts-daemon anacron apparmor apport avahi-daemon blk-availability bluetooth
cloud-config cloud-final cloud-init cloud-init-local console-setup cron cups cups-browsed
dmesg e2scrub_reap finalrd getty@ gnome-remote-desktop gpu-manager grub-common
grub-initrd-fallback kerneloops keyboard-setup lm-sensors lvm2-monitor multipathd
networkd-dispatcher nvidia-hibernate nvidia-resume nvidia-suspend
nvidia-suspend-then-hibernate open-iscsi open-vm-tools openvpn pollinate
power-profiles-daemon rsyslog secureboot-db setvtrgb ssl-cert switcheroo-control sysstat
systemd-networkd systemd-networkd-wait-online systemd-pstore systemd-resolved
systemd-timesyncd thermald ua-reboot-cmds ubuntu-advantage udisks2 ufw vgauth
wpa_supplicant
enabled-runtime netplan-ovs-cleanup systemd-fsck-root systemd-remount-fs
disabled brltty console-getty debug-shell iscsid nftables nvidia-powerd openvpn-client@
openvpn-server@ openvpn@ rsync rtkit-daemon serial-getty@ speech-dispatcherd ssh
```

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Platform Notes (Continued)

generated indirect masked

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-sysex
systemd-time-wait-sync upower wpa_supplicant-nl80211@ wpa_supplicant-wired@
wpa_supplicant@
speech-dispatcher
saned@ spice-vdagentd systemd-sysupdate systemd-sysupdate-reboot uidd
alsa-utils cryptdisks cryptdisks-early hwclock multipath-tools-boot
pulseaudio-enable-autospawn saned screen-cleanup sudo x11-common

14. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/vmlinuz-6.8.0-58-generic
root=/dev/mapper/ubuntu--vg-ubuntu--lv
ro

15. cpupower frequency-info
analyzing CPU 30:
current policy: frequency should be within 1.50 GHz and 3.20 GHz.
The governor "schedutil" may decide which speed to use
within this range.
boost state support:
Supported: yes
Active: yes
Boost States: 0
Total States: 3
Pstate-P0: 3200MHz

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 LTS

20. Disk information

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-aocc500-znerv5_A1.3

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
tmpfs	tmpfs	70G	3.3G	67G	5%	/mnt/ramdisk

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

Vendor: Dell Inc.
Product: PowerEdge R6725
Product Family: PowerEdge
Serial: 1234567

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:
24x 802C0000802C MTC20F2085S1RC64BD2 32 GB 2 rank 6400

23. BIOS

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

BIOS Vendor: Dell Inc.
BIOS Version: 1.1.3
BIOS Date: 02/25/2025
BIOS Revision: 1.1

Compiler Version Notes

C | 502.gcc_r(peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)

Target: i386-unknown-linux-gnu

Thread model: posix

InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
| 557.xz_r(base, peak)

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Compiler Version Notes (Continued)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C | 502.gcc_r(peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: i386-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
| 557.xz_r(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

C++ | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base, peak) 531.deepsjeng_r(base, peak)
| 541.leela_r(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

Fortran | 548.exchange2_r(base, peak)

AMD clang version 17.0.6 (CLANG: AOCC_5.0.0-Build#1316 2024_09_09)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-5.0.0-4925-1316/bin

Base Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang



SPEC CPU®2017 Integer Rate Result

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Dell Inc.

SPECrate®2017_int_base = 700

PowerEdge R6725 (AMD EPYC 9255 24-Core Processor)

SPECrate®2017_int_peak = 713

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2025

Hardware Availability: Mar-2025

Software Availability: Mar-2025

Base Portability Flags

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LINUX -DSPEC_LP64
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather
-Wl,-mllvm -Wl,-extra-inliner -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -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 -lflang
-lamdalloc-ext -ldl

C++ benchmarks:

-m64 -std=c++14 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-do-block-reorder=advanced -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -flto -mllvm -unroll-threshold=100
-mllvm -loop-unswitch-threshold=2000000
-mllvm -reduce-array-computations=3 -zopt -fno-PIE -no-pie
-fvirtual-function-elimination -fvisibility=hidden
-mllvm -do-block-reorder=advanced -lamdlibm -lflang -lamdalloc-ext
-ldl

Fortran benchmarks:

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -z muldefs -O3 -march=znver5
-fveclib=AMDLIBM -ffast-math -flto
-fepilog-vectorization-of-inductions -mllvm -optimize-strided-mem-cost
-floop-transform -mllvm -unroll-aggressive -mllvm -unroll-threshold=500
-lamdlibm -lflang -lamdalloc -ldl



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Base Other Flags

C benchmarks:

-Wno-unused-command-line-argument

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

Peak Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

Peak Portability Flags

500.perlbench_r: -DSPEC_LINUX_X64 -DSPEC_LP64

502.gcc_r: -D_FILE_OFFSET_BITS=64

505.mcf_r: -DSPEC_LP64

520.omnetpp_r: -DSPEC_LP64

523.xalancbmk_r: -DSPEC_LINUX -DSPEC_LP64

525.x264_r: -DSPEC_LP64

531.deepsjeng_r: -DSPEC_LP64

541.leela_r: -DSPEC_LP64

548.exchange2_r: -DSPEC_LP64

557.xz_r: -DSPEC_LP64

Peak Optimization Flags

C benchmarks:

500.perlbench_r: basepeak = yes

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Peak Optimization Flags (Continued)

502.gcc_r: -m32 -flto -Wl,-mllvm -Wl,-ldist-scalar-expand
-fenable-aggressive-gather -Wl,-mllvm -Wl,-extra-inliner
-z muldefs -Ofast -march=znver5 -fveclib=AMDLIBM
-ffast-math -fstruct-layout=7 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -fgnu89-inline
-lamdalloc

505.mcf_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-extra-inliner -Ofast -march=znver5
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lflang -lamdalloc-ext -ldl

525.x264_r: basepeak = yes

557.xz_r: -m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-ldist-scalar-expand
-fenable-aggressive-gather -Wl,-mllvm -Wl,-extra-inliner
-Ofast -march=znver5 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=7 -mllvm -unroll-threshold=50
-fremap-arrays -fstrip-mining
-mllvm -inline-threshold=1000
-mllvm -reduce-array-computations=3 -zopt -lamdlibm
-lflang -lamdalloc-ext -ldl

C++ benchmarks:

520.omnetpp_r: basepeak = yes

523.xalancbmk_r: basepeak = yes

531.deepsjeng_r: basepeak = yes

541.leela_r: basepeak = yes

Fortran benchmarks:

-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-inline-recursion=4 -Wl,-mllvm -Wl,-lsr-in-nested-loop
-Wl,-mllvm -Wl,-enable-iv-split -O3 -march=znver5 -fveclib=AMDLIBM

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Test Date: Apr-2025

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Software Availability: Mar-2025

Peak Optimization Flags (Continued)

Fortran benchmarks (continued):

-ffast-math -flto -fepilog-vectorization-of-inductions
-mllvm -optimize-strided-mem-cost -floop-transform
-mllvm -unroll-aggressive -mllvm -unroll-threshold=500 -lamdlibm
-lflang -lamdalloc -ldl

Peak Other Flags

C benchmarks (except as noted below):

-Wno-unused-command-line-argument

502.gcc_r: -L/usr/lib32 -Wno-unused-command-line-argument

-L/home/work/cpu2017/v119/aocc5/1316/amd_rate_aocc500_znver5_A_lib/lib32

C++ benchmarks:

-Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

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

<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.8.html>

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

<http://www.spec.org/cpu2017/flags/aocc500-flags.2024-10-10.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.8.xml>

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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