



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Dell Inc.

SPECrate®2017\_int\_base = 1710

PowerEdge R7625 (AMD EPYC 9734 112-Core Processor)

SPECrate®2017\_int\_peak = Not Run

CPU2017 License: 6573

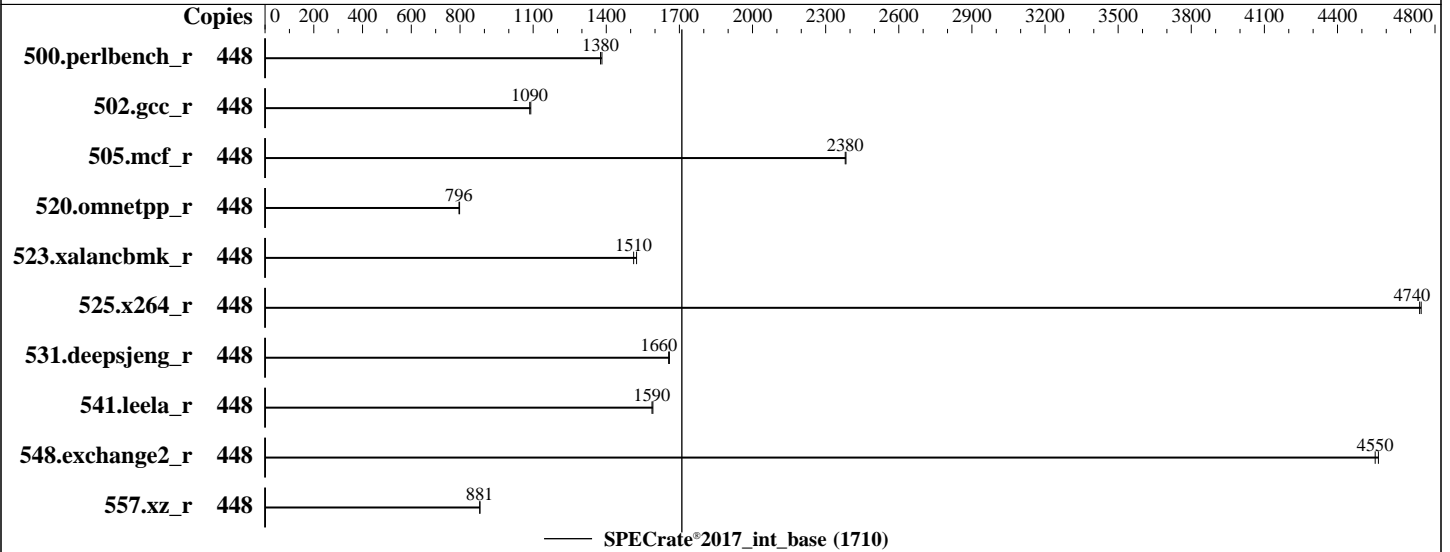
Test Date: Apr-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022



### Hardware

CPU Name: AMD EPYC 9734  
 Max MHz: 3000  
 Nominal: 2200  
 Enabled: 224 cores, 2 chips, 2 threads/core  
 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 / 7 cores  
 Other: None  
 Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)  
 Storage: 210 GB on tmpfs  
 Other: None

### Software

OS: Ubuntu 22.04.1 LTS  
 5.15.0-46-generic  
 Compiler: C/C++/Fortran: Version 4.0.0 of AOCC  
 Parallel: No  
 Firmware: Version 1.4.0 released Apr-2023  
 File System: tmpfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other: None  
 Power Management: BIOS and OS 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	448	516	1380	<b><u>518</u></b>	<b><u>1380</u></b>									
502.gcc_r	448	582	1090	<b><u>584</u></b>	<b><u>1090</u></b>									
505.mcf_r	448	304	2380	<b><u>304</u></b>	<b><u>2380</u></b>									
520.omnetpp_r	448	736	798	<b><u>739</u></b>	<b><u>796</u></b>									
523.xalancbmk_r	448	<b><u>313</u></b>	<b><u>1510</u></b>	310	1520									
525.x264_r	448	<b><u>166</u></b>	<b><u>4740</u></b>	165	4740									
531.deepsjeng_r	448	<b><u>310</u></b>	<b><u>1660</u></b>	309	1660									
541.leela_r	448	466	1590	<b><u>467</u></b>	<b><u>1590</u></b>									
548.exchange2_r	448	<b><u>258</u></b>	<b><u>4550</u></b>	257	4570									
557.xz_r	448	<b><u>549</u></b>	<b><u>881</u></b>	549	882									

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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) only on request for base runs,  
'echo madvise > /sys/kernel/mm/transparent\_hugepage/enabled' run as root.  
To enable THP for all allocations for peak runs,  
'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-aocc400-Blf/amd_rate_aocc400_genoa_B_lib/lib:/mnt/ramdisk/cpu2017-1.1.9-aocc400-Blf/amd_rate_aocc400_genoa_B_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

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.

Benchmark run from a 210 GB ramdisk created with the cmd: "mount -t tmpfs -o size=210G tmpfs /mnt/ramdisk"

## Platform Notes

BIOS settings:

```
DRAM Refresh Delay : Performance
DIMM Self Healing on
Uncorrectable Memory Error : Disabled
Virtualization Technology : Disabled
NUMA Nodes per Socket : 4
L3 Cache as NUMA Domain : Enabled
```

```
System Profile : Custom
Memory Patrol Scrub : Disabled
PCI ASPM L1 Link
Power Management : Disabled
Determinism Slider : Power Determinism
```

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-aocc400-Blf/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on amd-sut Sun Apr 23 02:49:01 2023

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 249 (249.11-0ubuntu3.4)

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## Platform Notes (Continued)

- 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. tuned-adm active
- 17. systemctl
- 18. /sys/kernel/mm/transparent\_hugepage
- 19. /sys/kernel/mm/transparent\_hugepage/khugepaged
- 20. OS release
- 21. Disk information
- 22. /sys/devices/virtual/dmi/id
- 23. dmidecode
- 24. BIOS

```
-----
1. uname -a
Linux amd-sut 5.15.0-46-generic #49-Ubuntu SMP Thu Aug 4 18:03:25 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux
-----
```

```
-----
2. w
02:49:01 up 3 min, 1 user, load average: 0.30, 0.17, 0.08
USER      TTY      FROM          LOGIN@   IDLE   JCPU   PCPU   WHAT
root      ttyL    -             02:47   29.00s  2.54s  0.45s /bin/bash ./amd_rate_aocc400_genoa_B1.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            6190065
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 ./dell-run-main.sh rate
/bin/bash ./dell-run-main.sh rate
/bin/bash ./dell-run-speccpu.sh rate --define DL-BIOSinc=Dell-BIOS_EPYC-4.inc --define DL-BIOS-adddcD=1
--define DL-BIOS-VirtD=1 --define DL-VERS=v4.5 --output_format csv,html,pdf,txt
python3 ./run_amd_rate_aocc400_genoa_B1.py
/bin/bash ./amd_rate_aocc400_genoa_B1.sh
runcpu --config amd_rate_aocc400_genoa_B1.cfg --tune base --reportable --iterations 2 --define
DL-BIOSinc=Dell-BIOS_EPYC-4.inc --define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-VERS=v4.5
--output_format csv,html,pdf,txt intrate
runcpu --configfile amd_rate_aocc400_genoa_B1.cfg --tune base --reportable --iterations 2 --define
-----
```

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## Platform Notes (Continued)

```
DL-BIOSinc=Dell-BIOS_EPYC-4.inc --define DL-BIOS-adddcD=1 --define DL-BIOS-VirtD=1 --define DL-VERS=v4.5
--output_format csv,html,pdf,txt --nopower --runmode rate --tune base --size test:train:refrate intrate
--nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.001/templogs/preenv.intrate.001.0.log --lognum 001.0
--from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-aocc400-B1f
```

### 6. /proc/cpuinfo

```
model name      : AMD EPYC 9734 112-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 25
model          : 160
stepping       : 2
microcode      : 0xaa00208
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 3584 4K pages
cpu cores     : 112
siblings      : 224
2 physical ids (chips)
448 processors (hardware threads)
physical id 0: core ids
0-6,8-14,16-22,24-30,32-38,40-46,48-54,56-62,64-70,72-78,80-86,88-94,96-102,104-110,112-118,120-126
physical id 1: core ids
0-6,8-14,16-22,24-30,32-38,40-46,48-54,56-62,64-70,72-78,80-86,88-94,96-102,104-110,112-118,120-126
physical id 0: apicids
0-13,16-29,32-45,48-61,64-77,80-93,96-109,112-125,128-141,144-157,160-173,176-189,192-205,208-221,224-237,240-253
physical id 1: apicids
256-269,272-285,288-301,304-317,320-333,336-349,352-365,368-381,384-397,400-413,416-429,432-445,448-461,464-477,480-493,496-509
```

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 2.37.2:

```
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):            448
On-line CPU(s) list: 0-447
Vendor ID:         AuthenticAMD
Model name:        AMD EPYC 9734 112-Core Processor
CPU family:        25
Model:             160
Thread(s) per core: 2
Core(s) per socket: 112
Socket(s):         2
Stepping:          2
BogoMIPS:          4400.93
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 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 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
```

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### Platform Notes (Continued)

invpcid\_single hw\_pstate ssbd mba ibrs ibpb stibp 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  
xsavvec xgetbv1 xsaves cqm\_llc cqm\_occup\_llc cqm\_mbm\_total cqm\_mbm\_local  
avx512\_bf16 clzero irperf xsaveerptr rdpru wbnoinvd amd\_ppin cppc arat npt  
lbrv svm\_lock nrip\_save tsc\_scale vmcb\_clean flushbyasid decodeassists  
pausefilter pfthreshold avic v\_omsave\_vmload vgif v\_spec\_ctrl avx512vbmi  
umip pku ospke avx512\_vbmi2 gfni vaes vpclmulqdq avx512\_vnni avx512\_bitalg  
avx512\_vpopcntdq la57 rdpid overflow\_recov succor smca fsrm flush\_l1d

AMD-V  
Virtualization:  
L1d cache: 7 MiB (224 instances)  
L1i cache: 7 MiB (224 instances)  
L2 cache: 224 MiB (224 instances)  
L3 cache: 512 MiB (32 instances)  
NUMA node(s): 8  
NUMA node0 CPU(s): 0-13,56-69,224-237,280-293  
NUMA node1 CPU(s): 28-41,84-97,252-265,308-321  
NUMA node2 CPU(s): 42-55,98-111,266-279,322-335  
NUMA node3 CPU(s): 14-27,70-83,238-251,294-307  
NUMA node4 CPU(s): 112-125,168-181,336-349,392-405  
NUMA node5 CPU(s): 140-153,196-209,364-377,420-433  
NUMA node6 CPU(s): 154-167,210-223,378-391,434-447  
NUMA node7 CPU(s): 126-139,182-195,350-363,406-419  
Vulnerability Itlb multihit: Not affected  
Vulnerability L1tf: Not affected  
Vulnerability Mds: Not affected  
Vulnerability Meltdown: Not affected  
Vulnerability Mmio stale data: Not affected  
Vulnerability Retbleed: Not affected  
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp  
Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and \_\_user pointer sanitization  
Vulnerability Spectre v2: Mitigation; Retpolines, IBPB conditional, IBRS\_FW, STIBP always-on, RSB filling  
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	32K	7M	8	Data	1	64	1	64
L1i	32K	7M	8	Instruction	1	64	1	64
L2	1M	224M	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: 8 nodes (0-7)  
node 0 cpus: 0-13,56-69,224-237,280-293  
node 0 size: 193031 MB  
node 0 free: 191520 MB  
node 1 cpus: 28-41,84-97,252-265,308-321  
node 1 size: 193520 MB  
node 1 free: 192785 MB  
node 2 cpus: 42-55,98-111,266-279,322-335  
node 2 size: 193520 MB  
node 2 free: 192810 MB  
node 3 cpus: 14-27,70-83,238-251,294-307  
node 3 size: 193504 MB  
node 3 free: 189148 MB  
node 4 cpus: 112-125,168-181,336-349,392-405

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## Platform Notes (Continued)

```

node 4 size: 193520 MB
node 4 free: 192948 MB
node 5 cpus: 140-153,196-209,364-377,420-433
node 5 size: 193520 MB
node 5 free: 192975 MB
node 6 cpus: 154-167,210-223,378-391,434-447
node 6 size: 193520 MB
node 6 free: 192978 MB
node 7 cpus: 126-139,182-195,350-363,406-419
node 7 size: 193488 MB
node 7 free: 192967 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:      1584770620 kB

```

```

10. who -r
run-level 3 Apr 23 02:47

```

```

11. Systemd service manager version: systemd 249 (249.11-0ubuntu3.4)
Default Target    Status
multi-user        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

```

```

13. Services, from systemctl list-unit-files
STATE                                UNIT FILES
enabled                              blk-availability console-setup cron dmesg e2scrub_reap finalrd getty@ gpu-manager
grub-common grub-initrd-fallback irqbalance keyboard-setup lm-sensors networkd-dispatcher
open-iscsi open-vm-tools pollinate rsyslog secureboot-db setvtrgb ssh systemd-networkd
systemd-pstore systemd-resolved systemd-timesyncd thermald tuned ua-reboot-cmds
ubuntu-advantage udisks2 vgauth wpa_supplicant
enabled-runtime netplan-ovs-cleanup systemd-fsck-root systemd-networkd-wait-online systemd-remount-fs
disabled      ModemManager apparmor console-getty debug-shell iscsid lvm2-monitor lxd-agent multipathd
nftables rsync serial-getty@ systemd-boot-check-no-failures systemd-generator
systemd-sysexit systemd-time-wait-sync ufw upower wpa_supplicant-nl80211@
wpa_supplicant-wired@ wpa_supplicant@
generated
indirect      uuid
masked       NetworkManager NetworkManager-dispatcher NetworkManager-wait-online cryptdisks
cryptdisks-early hwclock lvm2 multipath-tools-boot rc rcS screen-cleanup sudo x11-common

```

```

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

```

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### Platform Notes (Continued)

```
BOOT_IMAGE=/boot/vmlinuz-5.15.0-46-generic
root=UUID=593ab29a-c8fe-4d75-821a-b60d5c945311
ro
```

```
-----
15. cpupower frequency-info
analyzing CPU 0:
  Unable to determine current policy
  boost state support:
    Supported: yes
    Active: yes
    Boost States: 0
    Total States: 3
    Pstate-P0: 2200MHz
-----
```

```
-----
16. tuned-adm active
  Current active profile: latency-performance
-----
```

```
-----
17. sysctl
kernel.numa_balancing          1
kernel.randomize_va_space      0
vm.compaction_proactiveness    20
vm.dirty_background_bytes      0
vm.dirty_background_ratio      3
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
-----
```

```
-----
18. /sys/kernel/mm/transparent_hugepage
defrag          [always] defer+madvise madvise never
enabled         [always] madvise never
hpage_pmd_size 2097152
shmem_enabled   always within_size advise [never] deny force
-----
```

```
-----
19. /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
-----
```

```
-----
20. OS release
-----
```

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## Platform Notes (Continued)

From /etc/\*-release /etc/\*-version  
os-release Ubuntu 22.04.1 LTS

### 21. Disk information

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-aocc400-Blf  
Filesystem Type Size Used Avail Use% Mounted on  
tmpfs tmpfs 210G 3.5G 207G 2% /mnt/ramdisk

### 22. /sys/devices/virtual/dmi/id

Vendor: Dell Inc.  
Product: PowerEdge R7625  
Product Family: PowerEdge  
Serial: BRZ5015

### 23. dmidecode

Additional information from dmidecode 3.3 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 MTC40F2046S1RC48BA1 64 GB 2 rank 4800

### 24. BIOS

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

BIOS Vendor: Dell Inc.  
BIOS Version: 1.4.0  
BIOS Date: 04/11/2023  
BIOS Revision: 1.4

## Compiler Version Notes

C | 500.perlbench\_r(base) 502.gcc\_r(base) 505.mcf\_r(base) 525.x264\_r(base) 557.xz\_r(base)

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

C++ | 520.omnetpp\_r(base) 523.xalancbmk\_r(base) 531.deepsjeng\_r(base) 541.leela\_r(base)

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu  
Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

Fortran | 548.exchange2\_r(base)

AMD clang version 14.0.6 (CLANG: AOCC\_4.0.0-Build#389 2022\_10\_07) (based on LLVM Mirror.Version.14.0.6)  
Target: x86\_64-unknown-linux-gnu

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# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_int\_base = 1710

PowerEdge R7625 (AMD EPYC 9734 112-Core Processor)

SPECrate®2017\_int\_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Apr-2023

Hardware Availability: Jun-2023

Software Availability: Nov-2022

## Compiler Version Notes (Continued)

Thread model: posix  
InstalledDir: /opt/AMD/aocc/aocc-compiler-rel-4.0-3206-389/bin

## Base Compiler Invocation

C benchmarks:

clang

C++ benchmarks:

clang++

Fortran benchmarks:

flang

## 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 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-mllvm -Wl,-reduce-array-computations=3  
-Wl,-mllvm -Wl,-ldist-scalar-expand -fenable-aggressive-gather  
-z muldefs -O3 -march=znver4 -fveclib=AMDLIBM -ffast-math  
-fstruct-layout=7 -mllvm -unroll-threshold=50  
-mllvm -inline-threshold=1000 -fremap-arrays -fstrip-mining  
-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lflang  
-lamdalloc

C++ benchmarks:

-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

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## Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-Wl,-mllvm -Wl,-reduce-array-computations=3 -z muldefs -O3
-march=znver4 -fveclib=AMDLIBM -ffast-math
-mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000
-mllvm -reduce-array-computations=3 -zopt
-fvirtual-function-elimination -fvisibility=hidden -lamdlibm -lflang
-lamdalloc-ext
```

Fortran benchmarks:

```
-m64 -flto -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=znver4
-fveclib=AMDLIBM -ffast-math -fepilog-vectorization-of-inductions
-mllvm -optimize-strided-mem-cost -floop-transform
-mllvm -unroll-aggressive -mllvm -unroll-threshold=500 -lamdlibm
-lflang -lamdalloc
```

## Base Other Flags

C benchmarks:

```
-Wno-unused-command-line-argument
```

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/aocc400-flags.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.1.html>

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

<http://www.spec.org/cpu2017/flags/aocc400-flags.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.1.xml>



# SPEC CPU<sup>®</sup>2017 Integer Rate Result

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PowerEdge R7625 (AMD EPYC 9734 112-Core Processor)

SPECrate<sup>®</sup>2017\_int\_peak = Not Run

**CPU2017 License:** 6573

**Test Sponsor:** Dell Inc.

**Tested by:** Dell Inc.

**Test Date:** Apr-2023

**Hardware Availability:** Jun-2023

**Software Availability:** Nov-2022

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