



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

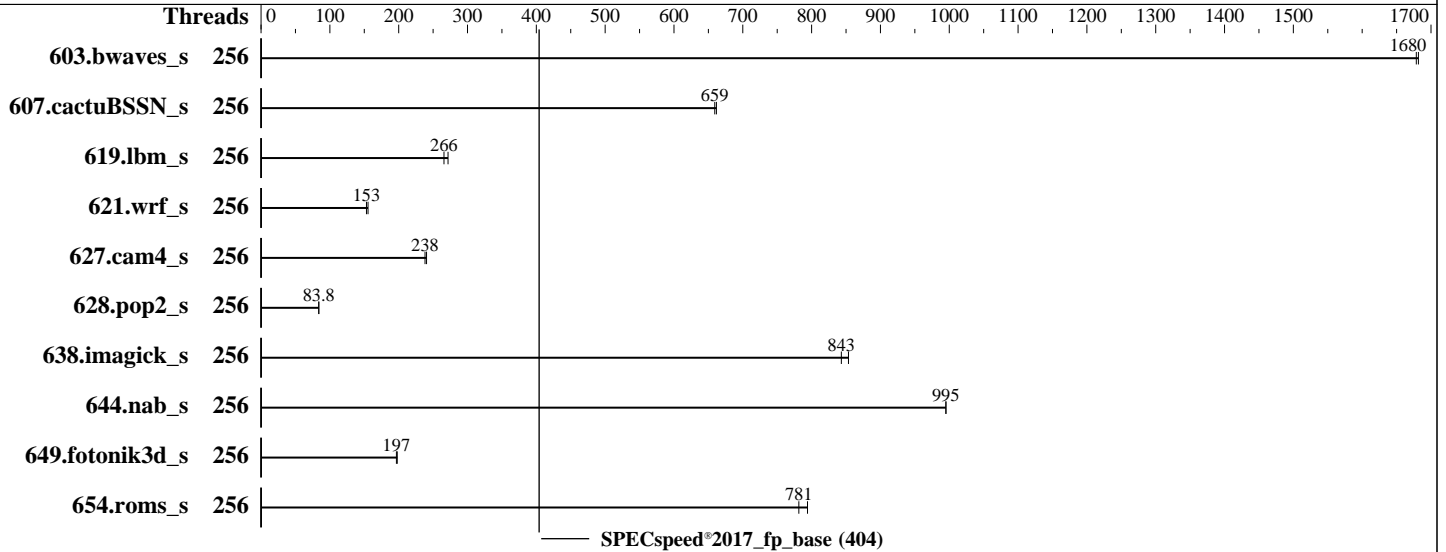
Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022



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: 1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)
 Storage: 130 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: Yes
 Firmware: Version 1.3.11 released Mar-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.



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Results Table

Benchmark	Base						Peak							
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	256	35.1	1680	<u>35.1</u>	<u>1680</u>									
607.cactuBSSN_s	256	<u>25.3</u>	<u>659</u>	25.2	662									
619.lbm_s	256	<u>19.7</u>	<u>266</u>	19.3	272									
621.wrf_s	256	<u>86.3</u>	<u>153</u>	85.1	155									
627.cam4_s	256	36.9	240	<u>37.2</u>	<u>238</u>									
628.pop2_s	256	<u>142</u>	<u>83.8</u>	141	84.0									
638.imagick_s	256	16.9	854	<u>17.1</u>	<u>843</u>									
644.nab_s	256	17.6	995	<u>17.6</u>	<u>995</u>									
649.fotonik3d_s	256	46.1	198	<u>46.3</u>	<u>197</u>									
654.roms_s	256	<u>20.1</u>	<u>781</u>	19.8	794									

SPECspeed®2017_fp_base = 404

SPECspeed®2017_fp_peak = Not Run

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.

To always enable THP for peak runs of:

603.bwaves_s, 607.cactuBSSN_s, 619.lbm_s, 627.cam4_s, 628.pop2_s, 638.imagick_s, 644.nab_s, 649.fotonik3d_s:
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled; echo always > /sys/kernel/mm/transparent_hugepage/defrag'
run as root.

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Jun-2023

Software Availability: Nov-2022

Operating System Notes (Continued)

To disable THP for peak runs of 621.wrf_s:
 'echo never > /sys/kernel/mm/transparent_hugepage/enabled; echo always > /sys/kernel/mm/transparent_hugepage/defrag'
 run as root.

To enable THP only on request for peak runs of 654.roms_s:
 'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled; echo madvise > /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 = "/mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e/amd_speed_aocc400_genoa_B_lib/lib:"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
MALLOC_CONF = "oversize_threshold:0,retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "256"
```

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 130 GB ramdisk created with the cmd: "mount -t tmpfs -o size=130G tmpfs /mnt/ramdisk"

Platform Notes

BIOS settings:

- DRAM Refresh Delay : Performance
- DIMM Self Healing on
- Uncorrectable Memory Error : Disabled
- Logical Processor : Disabled
- Virtualization Technology : Disabled
- L3 Cache as NUMA Domain : Enabled
- System Profile : Custom
- C-States : Disabled
- Memory Patrol Scrub : Disabled
- PCI ASPM L1 Link
- Power Management : Disabled
- Determinism Slider : Power Determinism
- Algorithm Performance
- Boost Disable (ApbDis) : Enabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

running on genoa-sut Tue May 2 21:04:06 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)
- 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 -a
Linux genoa-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
21:04:06 up 1:27, 1 user, load average: 5.56, 6.26, 3.65
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root ttyl - 19:37 1:25m 2.32s 0.52s /bin/bash ./amd_speed_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 6190229
nofiles 1024
vmemory(kbytes) unlimited
locks unlimited
rtprio 0
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

```

-----
5. sysinfo process ancestry
/sbin/init
/bin/login -p --
-bash
/bin/bash ./DELL_speed.sh
/bin/bash ./dell-run-main.sh speed
/bin/bash ./dell-run-main.sh speed
/bin/bash ./dell-run-specspeed.sh --output_format csv,html,pdf,txt -define
  Dell-BIOS-inc=Dell-BIOS_EPYC-4.inc --define Dell-BIOS-LogProcD=1
python3 ./run_amd_speed_aocc400_genoa_B1.py
/bin/bash ./amd_speed_aocc400_genoa_B1.sh
runcpu --config amd_speed_aocc400_genoa_B1.cfg --tune base --reportable --iterations 2 --output_format
  csv,html,pdf,txt -define Dell-BIOS-inc=Dell-BIOS_EPYC-4.inc --define Dell-BIOS-LogProcD=1 fpspeed
runcpu --configfile amd_speed_aocc400_genoa_B1.cfg --tune base --reportable --iterations 2 --output_format
  csv,html,pdf,txt --define Dell-BIOS-inc=Dell-BIOS_EPYC-4.inc --define Dell-BIOS-LogProcD=1 --nopower
  --runmode speed --tune base --size test:train:refspeed fpspeed --nopreenv --note-preenv --logfile
  $SPEC/tmp/CPU2017.002/templogs/preenv.fpspeed.002.0.log --lognum 002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e

```

```

-----
6. /proc/cpuinfo
model name      : AMD EPYC 9754 128-Core Processor
vendor_id      : AuthenticAMD
cpu family     : 25
model          : 160
stepping       : 2
microcode      : 0xaa00205
bugs           : sysret_ss_attrs spectre_v1 spectre_v2 spec_store_bypass
TLB size      : 3584 4K pages
cpu cores     : 128
siblings      : 128
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 2.37.2:
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):           256

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: May-2023
Hardware Availability: Jun-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```

On-line CPU(s) list:      0-255
Vendor ID:                AuthenticAMD
Model name:               AMD EPYC 9754 128-Core Processor
CPU family:               25
Model:                    160
Thread(s) per core:      1
Core(s) per socket:      128
Socket(s):                 2
Stepping:                  2
Frequency boost:          enabled
CPU max MHz:              3101.0000
CPU min MHz:              400.0000
BogoMIPS:                 4501.50
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 pdpelgb 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
                          invpcid_single hw_pstate ssbd mba ibrs ibpb stibp 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
                          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_vmsave_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

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):       64-71
NUMA node3 CPU(s):       72-79
NUMA node4 CPU(s):       32-39
NUMA node5 CPU(s):       40-47
NUMA node6 CPU(s):       96-103
NUMA node7 CPU(s):       104-111
NUMA node8 CPU(s):       48-55
NUMA node9 CPU(s):       56-63
NUMA node10 CPU(s):      112-119
NUMA node11 CPU(s):      120-127
NUMA node12 CPU(s):      16-23
NUMA node13 CPU(s):      24-31
NUMA node14 CPU(s):      80-87
NUMA node15 CPU(s):      88-95
NUMA node16 CPU(s):      128-135
NUMA node17 CPU(s):      136-143
NUMA node18 CPU(s):      192-199
NUMA node19 CPU(s):      200-207
NUMA node20 CPU(s):      160-167
NUMA node21 CPU(s):      168-175
NUMA node22 CPU(s):      224-231
NUMA node23 CPU(s):      232-239
NUMA node24 CPU(s):      176-183

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

```

NUMA node25 CPU(s):      184-191
NUMA node26 CPU(s):      240-247
NUMA node27 CPU(s):      248-255
NUMA node28 CPU(s):      144-151
NUMA node29 CPU(s):      152-159
NUMA node30 CPU(s):      208-215
NUMA node31 CPU(s):      216-223
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/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2:  Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP disabled, 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	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: 47928 MB
node 0 free: 47679 MB
node 1 cpus: 8-15
node 1 size: 48381 MB
node 1 free: 48249 MB
node 2 cpus: 16-23
node 2 size: 48381 MB
node 2 free: 48227 MB
node 3 cpus: 24-31
node 3 size: 48381 MB
node 3 free: 48250 MB
node 4 cpus: 32-39
node 4 size: 48346 MB
node 4 free: 48194 MB
node 5 cpus: 40-47
node 5 size: 48381 MB
node 5 free: 48248 MB
node 6 cpus: 48-55
node 6 size: 48381 MB
node 6 free: 48245 MB
node 7 cpus: 56-63
node 7 size: 48381 MB
node 7 free: 48244 MB
node 8 cpus: 64-71
node 8 size: 48381 MB
node 8 free: 48264 MB
node 9 cpus: 72-79
node 9 size: 48381 MB

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

```

node 9 free: 48253 MB
node 10 cpus: 112-119
node 10 size: 48381 MB
node 10 free: 48248 MB
node 11 cpus: 120-127
node 11 size: 48357 MB
node 11 free: 48227 MB
node 12 cpus: 16-23
node 12 size: 48381 MB
node 12 free: 48240 MB
node 13 cpus: 24-31
node 13 size: 48381 MB
node 13 free: 48244 MB
node 14 cpus: 80-87
node 14 size: 48381 MB
node 14 free: 48245 MB
node 15 cpus: 88-95
node 15 size: 48381 MB
node 15 free: 48246 MB
node 16 cpus: 128-135
node 16 size: 48381 MB
node 16 free: 47087 MB
node 17 cpus: 136-143
node 17 size: 48381 MB
node 17 free: 48176 MB
node 18 cpus: 192-199
node 18 size: 48381 MB
node 18 free: 48152 MB
node 19 cpus: 200-207
node 19 size: 48381 MB
node 19 free: 48157 MB
node 20 cpus: 160-167
node 20 size: 48381 MB
node 20 free: 48182 MB
node 21 cpus: 168-175
node 21 size: 48381 MB
node 21 free: 48176 MB
node 22 cpus: 224-231
node 22 size: 48381 MB
node 22 free: 48190 MB
node 23 cpus: 232-239
node 23 size: 48381 MB
node 23 free: 48217 MB
node 24 cpus: 176-183
node 24 size: 48381 MB
node 24 free: 48210 MB
node 25 cpus: 184-191
node 25 size: 48381 MB
node 25 free: 48189 MB
node 26 cpus: 240-247
node 26 size: 48381 MB
node 26 free: 48185 MB
node 27 cpus: 248-255
node 27 size: 48341 MB
node 27 free: 48132 MB
node 28 cpus: 144-151
node 28 size: 48381 MB
node 28 free: 48175 MB
node 29 cpus: 152-159
node 29 size: 48381 MB

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

```

node 29 free: 48218 MB
node 30 cpus: 208-215
node 30 size: 48381 MB
node 30 free: 44674 MB
node 31 cpus: 216-223
node 31 size: 48381 MB
node 31 free: 48192 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
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
3: 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
4: 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
5: 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
6: 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
7: 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
8: 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
9: 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
10: 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
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
12: 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
13: 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
14: 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
15: 11 11 11 11 11 11 11 11 11 11 11 11 11 11 11 10 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 10 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 11 10 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 11 11 10 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 11 11 11 10 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 11 11 11 11 10 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 11 11 11 11 11 10 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 11 11 11 11 11 11 10 11
11 11 11 11 11 11
23: 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
24: 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

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

```

25: 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 11
26: 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 11
27: 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 10 11 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 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 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 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 11

```

```

-----
9. /proc/meminfo
MemTotal: 1584812544 kB
-----

```

```

-----
10. who -r
run-level 3 May 2 19:37
-----

```

```

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

```

```

-----
12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled ModemManager blk-availability cloud-config cloud-final cloud-init cloud-init-local
console-setup cron dmesg e2scrub_reap finalrd getty@ grub-common grub-initrd-fallback
irqbalance keyboard-setup lm-sensors lvm2-monitor lxd-agent networkd-dispatcher open-iscsi
open-vm-tools pollinate rsync rsyslog secureboot-db setvtrgb ssh systemd-networkd
systemd-networkd-wait-online systemd-pstore systemd-resolved systemd-timesyncd thermald
tuned ua-reboot-cmds ubuntu-advantage udisks2 vgauth
enabled-runtime netplan-ovs-cleanup rc-local systemd-remount-fs
disabled apparmor console-getty debug-shell iscsid multipathd nftables powertop serial-getty@
smartmontools sysstat sysstat systemd-boot-check-no-failures systemd-network-generator
systemd-sysext systemd-time-wait-sync ufw upower

generated apport
indirect uidd
masked accounts-daemon alsa-utils atd cryptdisks cryptdisks-early gpu-manager hwclock lvm2
multipath-tools-boot rc rcS screen-cleanup sudo x11-common
-----

```

```

-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/vmlinuz-5.15.0-46-generic
root=/dev/mapper/ubuntu--vg-ubuntu--lv
ro
-----

```

```

-----
14. cpupower frequency-info
analyzing CPU 0:
current policy: frequency should be within 400 MHz and 3.10 GHz.
The governor "performance" may decide which speed to use
within this range.

boost state support:
Supported: yes
-----

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Platform Notes (Continued)

Active: yes
Boost States: 0
Total States: 3
Pstate-P0: 2250MHz

15. tuned-adm active
Current active profile: latency-performance

16. 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

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

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 22.04.1 LTS

20. Disk information
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-aocc400-B1e
Filesystem Type Size Used Avail Use% Mounted on
tmpfs tmpfs 130G 3.5G 127G 3% /mnt/ramdisk

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Jun-2023

Software Availability: Nov-2022

Platform Notes (Continued)

```

21. /sys/devices/virtual/dmi/id
Vendor:      Dell Inc.
Product:     PowerEdge R6625
Product Family: PowerEdge
Serial:      BGP4016

```

```

-----
22. 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

```

```

-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Dell Inc.
BIOS Version:     1.3.11
BIOS Date:        03/31/2023
BIOS Revision:    1.3

```

Compiler Version Notes

```

=====
C | 619.lbm_s(base) 638.imagick_s(base) 644.nab_s(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++, C, Fortran | 607.cactuBSSN_s(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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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

```

```

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 | 603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(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

```

```

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

```

```

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

```

```

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

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Date: May-2023

Test Sponsor: Dell Inc.

Hardware Availability: Jun-2023

Tested by: Dell Inc.

Software Availability: Nov-2022

Compiler Version Notes (Continued)

Fortran, C | 621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(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
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

Base Compiler Invocation

C benchmarks:

clang

Fortran benchmarks:

flang

Benchmarks using both Fortran and C:

flang clang

Benchmarks using Fortran, C, and C++:

clang++ clang flang

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
627.cam4_s: -DSPEC_CASE_FLAG -DSPEC_LP64
628.pop2_s: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Jun-2023

Software Availability: Nov-2022

Base Optimization Flags

C benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -fopenmp=libomp -lomp -lamdlibm -lamdalloc
-lflang
```

Fortran benchmarks:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -DSPEC_OPENMP -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -Mrecursive
-funroll-loops -mllvm -lsr-in-nested-loop
-mllvm -reduce-array-computations=3 -zopt -fopenmp=libomp -lomp
-lamdlibm -lamdalloc -lflang
```

Benchmarks using both Fortran and C:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-enable-X86-prefetching -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -fopenmp=libomp -lomp -lamdlibm -lamdalloc
-lflang
```

Benchmarks using Fortran, C, and C++:

```
-m64 -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fopenmp -flto -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-freemap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-DSPEC_OPENMP -zopt -mllvm -unroll-threshold=100 -finline-aggressive
-mllvm -loop-unswitch-threshold=200000 -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -fopenmp=libomp -lomp -lamdlibm -lamdalloc
-lflang
```



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017_fp_base = 404

PowerEdge R6625 (AMD EPYC 9754 128-Core Processor)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: May-2023

Hardware Availability: Jun-2023

Software Availability: Nov-2022

Base Other Flags

C benchmarks:

-Wno-return-type -Wno-unused-command-line-argument

Fortran benchmarks:

-Wno-unused-command-line-argument

Benchmarks using both Fortran and C:

-Wno-return-type -Wno-unused-command-line-argument

Benchmarks using Fortran, C, and C++:

-Wno-return-type -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 and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.9 on 2023-05-02 17:04:06-0400.

Report generated on 2023-06-13 15:15:08 by CPU2017 PDF formatter v6716.

Originally published on 2023-06-13.