# SPEC CPU®2017 Floating Point Rate Result

## Dell Inc.

PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

**SPECrater®2017_fp_base = 955**

**SPECrater®2017_fp_peak = Not Run**

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECrate2017_fp_base</th>
<th>SPECrate2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>128</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Hardware

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>AMD EPYC 9374F</td>
</tr>
<tr>
<td>Max MHz</td>
<td>4300</td>
</tr>
<tr>
<td>Nominal</td>
<td>3850</td>
</tr>
<tr>
<td>Enabled</td>
<td>64 cores, 2 chips, 2 threads/core</td>
</tr>
<tr>
<td>Orderable</td>
<td>1,2 chips</td>
</tr>
<tr>
<td>Cache L1:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>L2:</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3:</td>
<td>256 MB I+D on chip per chip, 32 MB shared / 4 cores</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>1536 GB (24 x 64 GB 2Rx4 PC5-4800B-R)</td>
</tr>
<tr>
<td>Storage:</td>
<td>125 GB on tmpfs</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
</tbody>
</table>

## Software

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS:</td>
<td>Ubuntu 22.04.1 LTS</td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++/Fortran: Version 4.0.0 of AOCC</td>
</tr>
<tr>
<td>Parallel:</td>
<td>No</td>
</tr>
<tr>
<td>Firmware:</td>
<td>Version 1.1.0 released Nov-2022</td>
</tr>
<tr>
<td>File System:</td>
<td>tmpfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
<tr>
<td>Power Management:</td>
<td>BIOS and OS set to prefer performance at the cost of additional power usage.</td>
</tr>
</tbody>
</table>

---

**CPU2017 License:** 6573  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** Dec-2022  
**Hardware Availability:** Feb-2023  
**Software Availability:** Nov-2022
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.

PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor) © 2017-2023 Standard Performance Evaluation Corporation

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

SPECraten®2017_fp_base = 955
SPECraten®2017_fp_peak = Not Run

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>128</td>
<td>750</td>
<td>1710</td>
<td>750</td>
<td>1710</td>
<td></td>
<td></td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>128</td>
<td>137</td>
<td>1190</td>
<td>137</td>
<td>1190</td>
<td></td>
<td></td>
</tr>
<tr>
<td>508.namd_r</td>
<td>128</td>
<td>195</td>
<td>623</td>
<td>195</td>
<td>623</td>
<td></td>
<td></td>
</tr>
<tr>
<td>510.parest_r</td>
<td>128</td>
<td>342</td>
<td>979</td>
<td>341</td>
<td>982</td>
<td></td>
<td></td>
</tr>
<tr>
<td>511.povray_r</td>
<td>128</td>
<td>327</td>
<td>915</td>
<td>328</td>
<td>912</td>
<td></td>
<td></td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>128</td>
<td>242</td>
<td>556</td>
<td>242</td>
<td>558</td>
<td></td>
<td></td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>128</td>
<td>290</td>
<td>990</td>
<td>289</td>
<td>992</td>
<td></td>
<td></td>
</tr>
<tr>
<td>526.blender_r</td>
<td>128</td>
<td>232</td>
<td>842</td>
<td>229</td>
<td>850</td>
<td></td>
<td></td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>128</td>
<td>251</td>
<td>893</td>
<td>248</td>
<td>902</td>
<td></td>
<td></td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>128</td>
<td>94.3</td>
<td>3380</td>
<td>94.4</td>
<td>3370</td>
<td></td>
<td></td>
</tr>
<tr>
<td>544.nab_r</td>
<td>128</td>
<td>159</td>
<td>1360</td>
<td>159</td>
<td>1360</td>
<td></td>
<td></td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>128</td>
<td>890</td>
<td>561</td>
<td>891</td>
<td>560</td>
<td></td>
<td></td>
</tr>
<tr>
<td>554.roms_r</td>
<td>128</td>
<td>441</td>
<td>461</td>
<td>442</td>
<td>460</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SPECraten®2017_fp_base = 955
SPECraten®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.

(Continued on next page)
Operating System Notes (Continued)

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:
LD_LIBRARY_PATH = 
  "/mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b/amd_rate_aocc400_genoa_B_lib/lib
  "/mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b/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 125 GB ramdisk created with the cmd: "mount -t tmpfs -o size=125G tmpfs /mnt/ramdisk"

Platform Notes

BIOS settings:
- DRAM Refresh Delay: Performance
- DIMM Self Healing on
- Uncorrectable Memory Error: Disabled
- Logical Processor: Enabled
- Virtualization Technology: Disabled
- L1 Stride Prefetcher: Disabled
- NUMA Nodes per Socket: 4
- L3 Cache as NUMA Domain: Enabled
Dell Inc.

PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

Table:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_base</td>
<td>955</td>
</tr>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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

**Platform Notes (Continued)**

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

Sysinfo program /mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on amd-sut Mon Dec 12 21:09:25 2022

SUT (System Under Test) info as seen by some common utilities.
For more information on this section, see https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
- model name: AMD EPYC 9374F 32-Core Processor
- 2 "physical id"s (chips)
- 128 "processors"

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
- cpu cores: 32
- siblings: 64
- physical 0: cores 0 1 2 3 8 9 10 11 16 17 18 19 24 25 26 27 32 33 34 35 40 41 42 43
  48 49 50 51 56 57 58 59
- physical 1: cores 0 1 2 3 8 9 10 11 16 17 18 19 24 25 26 27 32 33 34 35 40 41 42 43
  48 49 50 51 56 57 58 59

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): 128
- On-line CPU(s) list: 0-127
- Vendor ID: AuthenticAMD
- Model name: AMD EPYC 9374F 32-Core Processor
- CPU family: 25
- Model: 17
- Thread(s) per core: 2
- Core(s) per socket: 32
- Socket(s): 2
- Stepping: 1
- Frequency boost: enabled
- CPU max MHz: 4306.0000
- CPU min MHz: 400.0000
- BogoMIPS: 7702.25

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.
PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

SPECrate®2017_fp_base = 955
SPECrate®2017_fp_peak = Not Run

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

Flags: fpu vme de pse 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 r apl pni pclmulqdq ssse3 sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3nowprefetch osfw ibs kininit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_l1l mwaitx cpb cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmcall fsgsbase bmi1 avx2 smep bmi2 ermv invpcid cmqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb avx512cd sha ni avx512bw avx512vl xsaveopt xsavec xgetbv1 xsavec cmqm_occupy_llc cmqm_mbm_total cmqm_mbm_local avx512_bf16 clzero irperf xsaveerptr rdpru bwnoinvd amd_pinnacle ccpp 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_recover succor smca fsrm flush_l1d

Virtualization: AMD-V
L1d cache: 2 MiB (64 instances)
L1i cache: 2 MiB (64 instances)
L2 cache: 64 MiB (64 instances)
L3 cache: 512 MiB (16 instances)
NUMA node(s): 16
NUMA node0 CPU(s): 0-3, 64-67
NUMA node1 CPU(s): 16-19, 80-83
NUMA node2 CPU(s): 8-11, 72-75
NUMA node3 CPU(s): 24-27, 88-91
NUMA node4 CPU(s): 12-15, 76-79
NUMA node5 CPU(s): 28-31, 92-95
NUMA node6 CPU(s): 4-7, 68-71
NUMA node7 CPU(s): 20-23, 84-87
NUMA node8 CPU(s): 32-35, 96-99
NUMA node9 CPU(s): 48-51, 112-115
NUMA node10 CPU(s): 40-43, 104-107
NUMA node11 CPU(s): 56-59, 120-123
NUMA node12 CPU(s): 44-47, 108-111
NUMA node13 CPU(s): 60-63, 124-127
NUMA node14 CPU(s): 36-39, 100-103
NUMA node15 CPU(s): 52-55, 116-119
Vulnerability Itlb multihit: Not affected
Vulnerability L1tlf: 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
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.

PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

SPECratre®2017_fp_base = 955

SPECratre®2017_fp_peak = Not Run

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

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

Vulnerability Spectre v2: Mitigation; Retpolines, IBPB conditional, IBRS_FW, STIBP always-on, RSB filling
Vulnerability Srbds: Not affected
Vulnerability Tx async abort: Not affected

From lscpu --cache:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1d</td>
<td>32K</td>
<td>2M</td>
<td>8</td>
<td>Data</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L1i</td>
<td>32K</td>
<td>2M</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L2</td>
<td>1M</td>
<td>64M</td>
<td>8</td>
<td>Unified</td>
<td>2</td>
<td>2048</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L3</td>
<td>32M</td>
<td>512M</td>
<td>16</td>
<td>Unified</td>
<td>3</td>
<td>32768</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

/proc/cpuinfo cache data

cache size: 1024 KB

From numactl --hardware

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

available: 16 nodes (0-15)
node 0 cpus: 0 1 2 3 64 65 66 67
node 0 size: 96312 MB
node 0 free: 95809 MB
node 1 cpus: 16 17 18 19 80 81 82 83
node 1 size: 96764 MB
node 1 free: 96303 MB
node 2 cpus: 8 9 10 11 72 73 74 75
node 2 size: 96765 MB
node 2 free: 96256 MB
node 3 cpus: 24 25 26 27 88 89 90 91
node 3 size: 96764 MB
node 3 free: 96320 MB
node 4 cpus: 12 13 14 15 76 77 78 79
node 4 size: 96765 MB
node 4 free: 96328 MB
node 5 cpus: 28 29 30 31 92 93 94 95
node 5 size: 96764 MB
node 5 free: 96324 MB
node 6 cpus: 4 5 6 7 68 69 70 71
node 6 size: 96765 MB
node 6 free: 96344 MB
node 7 cpus: 20 21 22 23 84 85 86 87
node 7 size: 96748 MB
node 7 free: 96312 MB
node 8 cpus: 32 33 34 35 96 97 98 99
node 8 size: 96765 MB
node 8 free: 96313 MB
node 9 cpus: 48 49 50 51 112 113 114 115
node 9 size: 96764 MB

(Continued on next page)
**Platform Notes (Continued)**

```
node  9 free:  96326 MB
node 10 cpus:  40  41  42  43  104  105  106  107
node 10 size:  96765 MB
node 10 free:  96333 MB
node 11 cpus:  56  57  58  59  120  121  122  123
node 11 size:  96764 MB
node 11 free:  92800 MB
node 12 cpus:  44  45  46  47  108  109  110  111
node 12 size:  96765 MB
node 12 free:  96328 MB
node 13 cpus:  60  61  62  63  124  125  126  127
node 13 size:  96729 MB
node 13 free:  96300 MB
node 14 cpus:  36  37  38  39  100  101  102  103
node 14 size:  96765 MB
node 14 free:  96322 MB
node 15 cpus:  52  53  54  55  116  117  118  119
node 15 size:  96739 MB
node 15 free:  96299 MB
node distances:
  node   0   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15
0:  10  11  12  12  12  12  12  12  32  32  32  32  32  32  32  32
1:  11  10  12  12  12  12  12  12  32  32  32  32  32  32  32  32
2:  12  12  10  11  12  12  12  12  32  32  32  32  32  32  32  32
3:  12  12  11  10  12  12  12  12  32  32  32  32  32  32  32  32
4:  12  12  12  12  10  11  12  12  32  32  32  32  32  32  32  32
5:  12  12  12  12  11  10  12  12  32  32  32  32  32  32  32  32
6:  12  12  12  12  12  12  10  11  32  32  32  32  32  32  32  32
7:  12  12  12  12  12  12  11  10  32  32  32  32  32  32  32  32
8:  32  32  32  32  32  32  32  32  10  11  12  12  12  12  12  12
9:  32  32  32  32  32  32  32  32  11  10  12  12  12  12  12  12
10: 32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12
11: 32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12
12: 32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12
13: 32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12
14: 32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12
15: 32  32  32  32  32  32  32  32  12  12  12  12  12  12  12  12
```

From /proc/meminfo
MemTotal:        1584861016 kB
HugePages_Total:       0
Hugepagesize:       2048 kB
/sbin/tuned-adm active
Current active profile: latency-performance
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has

(Continued on next page)
Dell Inc.

PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

SPECrater®2017_fp_base = 955
SPECrater®2017_fp_peak = Not Run

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

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Platform Notes (Continued)

```
performance

/usr/bin/lsb_release -d
Ubuntu 22.04.1 LTS

From /etc/*release* /etc/*version*
debian_version: bookworm/sid
os-release:
  PRETTY_NAME="Ubuntu 22.04.1 LTS"
  NAME="Ubuntu"
  VERSION_ID="22.04"
  VERSION="22.04.1 LTS (Jammy Jellyfish)"
  VERSION_CODENAME=jammy
  ID=ubuntu
  ID_LIKE=debian
  HOME_URL="https://www.ubuntu.com/

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

Kernel self-reported vulnerability status:

CVE-2018-12207 (iTLB Multihit): Not affected
CVE-2018-3620 (L1 Terminal Fault): Not affected
Microarchitectural Data Sampling: Not affected
CVE-2017-5754 (Meltdown):
  mmio_stale_data: Not affected
  retbleed: Not affected
CVE-2018-3639 (Speculative Store Bypass):
  Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):
  Mitigation: usercopy/swaps barriers and __user pointer sanitation
CVE-2017-5715 (Spectre variant 2):
  Mitigation: Retpolines, IBPB: conditional, IBRS_FW, STIBP: always-on, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Dec 12 19:41

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b
  Filesystem    Type   Size  Used Avail Use% Mounted on
tmpfs    tmpfs  125G  3.4G  122G   3% /mnt/ramdisk
```

(Continued on next page)
Dell Inc.

PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

**SPEC CPU®2017 Floating Point Rate Result**

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>955</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 6573  
**Test Date:** Dec-2022  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Hardware Availability:** Feb-2023  
**Software Availability:** Nov-2022

**Platform Notes (Continued)**

From /sys/devices/virtual/dmi/id

Vendor: Dell Inc.  
Product: PowerEdge R6625  
Product Family: PowerEdge  
Serial: BGP4023

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 80CE0000080CE M321R8GA0BB0-CQKDG 64 GB 2 rank 4800

BIOS:

- BIOS Vendor: Dell Inc.  
- BIOS Version: 1.1.0  
- BIOS Date: 11/25/2022  
- BIOS Revision: 1.1

(End of data from sysinfo program)

**Compiler Version Notes**

```
==============================================================================
C               | 519.lbm_r(base) 538.imagick_r(base) 544.nab_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++             | 508.namd_r(base) 510.parest_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++, C          | 511.povray_r(base) 526.blender_r(base)
------------------------------------------------------------------------------
```

(Continued on next page)
Compiler Version Notes (Continued)

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, C, Fortran | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_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
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, C | 521.wrf_r(base) 527.cam4_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

(Continued on next page)
Dell Inc.  
PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

<table>
<thead>
<tr>
<th>CPU2017 License: 6573</th>
<th>Test Date: Dec-2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Dell Inc.</td>
<td>Hardware Availability: Feb-2023</td>
</tr>
<tr>
<td>Tested by: Dell Inc.</td>
<td>Software Availability: Nov-2022</td>
</tr>
</tbody>
</table>

SPECrat®2017_fp_base = 955
SPECrat®2017_fp_peak = Not Run

Compiler Version Notes (Continued)

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

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Benchmarks using both Fortran and C:
flang clang

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

Benchmarks using Fortran, C, and C++:
clang++ clang flang

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_CASE_FLAG -Mbyteswapio -DSPEC_LP64
526.blender_r: -funsigned-char -DSPEC_LP64
527.cam4_r: -DSPEC_CASE_FLAG -DSPEC_LP64
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64

(Continued on next page)
Base Portability Flags (Continued)

549.fotonik3d_r -DSPEC_LP64
554.roms_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 -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 -lamdalloc -lflang

C++ benchmarks:
-m64 -flto -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 -mllvm -unroll-threshold=100
-fineline-aggressive -mllvm -x86-use-vzeroupper=false -O3 -march=znver4
-mllvm -reduce-array-computations=3 -zopt -lamdlibm -lamdalloc
-lflang

Fortran benchmarks:
-m64 -flto -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 -Kieee -Mrecursive -funroll-loops
-mllvm -lsr-in-nested-loop -mllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm -lamdalloc
-lflang

Benchmarks using both Fortran and C:
-m64 -flto -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 -fstruct-layout=7
-mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
-fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3
-zopt -Kieee -Mrecursive -funroll-loops -mllvm -lsr-in-nested-loop
-fepilog-vectorization-of-inductions -lamdlibm -lamdalloc
-lflang

Benchmarks using both C and C++:
-m64 -flto -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6

(Continued on next page)
Dell Inc. PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)

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

SPECrate®2017_fp_base = 955
SPECrate®2017_fp_peak = Not Run

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Nov-2022

Base Optimization Flags (Continued):

Benchmarks using both C and C++ (continued):
-\( -W1, -mllvm -W1, -reduce-array-computations=3 \)
-\( -W1, -mllvm -W1, -x86-use-vzeroupper=false -O3 -march=znver4 \)
-\( -fvecclib=AMDLIBM -ffast-math -fstruct-layout=7 \)
-\( -mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000 \)
-\( -fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3 \)
-\( -zopt -mllvm -unroll-threshold=100 -finline-aggressive \)
-\( -mllvm -loop-unswitch-threshold=200000 -lamdlibm -lamdaloc -lflang \)

Benchmarks using Fortran, C, and C++:
-\( -m64 -flto -W1, -mllvm -W1, -align-all-nofallthru-blocks=6 \)
-\( -W1, -mllvm -W1, -reduce-array-computations=3 \)
-\( -W1, -mllvm -W1, -x86-use-vzeroupper=false -O3 -march=znver4 \)
-\( -fvecclib=AMDLIBM -ffast-math -fstruct-layout=7 \)
-\( -mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000 \)
-\( -fremap-arrays -fstrip-mining -mllvm -reduce-array-computations=3 \)
-\( -zopt -mllvm -unroll-threshold=100 -finline-aggressive \)
-\( -mllvm -loop-unswitch-threshold=200000 -kieee -mrecursive \)
-\( -funroll-loops -mllvm -lsr-in-nested-loop \)
-\( -fepilog-vectorization-of-inductions -lamdlibm -lamdaloc -lflang \)

Base Other Flags

C benchmarks:
-\( -Wno-unused-command-line-argument \)

C++ benchmarks:
-\( -Wno-unused-command-line-argument \)

Fortran benchmarks:
-\( -Wno-unused-command-line-argument \)

Benchmarks using both Fortran and C:
-\( -Wno-unused-command-line-argument \)

Benchmarks using both C and C++:
-\( -Wno-unused-command-line-argument \)

Benchmarks using Fortran, C, and C++:
-\( -Wno-unused-command-line-argument \)
## SPEC CPU®2017 Floating Point Rate Result

**Dell Inc.**

PowerEdge R6625 (AMD EPYC 9374F 32-Core Processor)  

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>955</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 6573  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Hardware Availability:** Feb-2023  
**Software Availability:** Nov-2022  
**Test Date:** Dec-2022

The flags files that were used to format this result can be browsed at  
http://www.spec.org/cpu2017/flags/aocc400-flags.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-v1.0.xml

---

SPEC CPU and SPECrate 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 v1.1.8 on 2022-12-12 16:09:24-0500.  
Report generated on 2023-02-01 18:17:59 by CPU2017 PDF formatter v6442.  
Originally published on 2023-02-01.