### Dell Inc.

**PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)**

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

| **SPECrater** | 2017 fp_base = 570 |
| **SPECrater** | 2017 fp_peak = Not Run |

#### Hardware

| Copies | 0 | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 | 2400 |
|--------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 503.bwaves_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 507.cactuBSSN_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 508.namd_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 510.parest_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 511.povray_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 519.lbm_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 521.wrf_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 526.blender_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 527.cam4_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 538.imagick_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 544.nab_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 549.fotonik3d_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 554.roms_r | 96 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

<table>
<thead>
<tr>
<th>Software</th>
</tr>
</thead>
</table>

| OS:       | Ubuntu 22.04.1 LTS |
| Compiler: | C/C++/Fortran: Version 4.0.0 of AOCC |
| Parallel: | No |
| Firmware: | Version 1.1.0 released Nov-2022 |
| File System: | tmpfs |
| System State: | Run level 3 (multi-user) |
| Base Pointers: | 64-bit |
| Peak Pointers: | Not Applicable |
| Power Management: | BIOS and OS set to prefer performance at the cost of additional power usage. |

#### Notes

- CPU Name: AMD EPYC 9474F
- Max MHz: 4100
- Nominal: 3600
- Enabled: 48 cores, 1 chip, 2 threads/core
- Orderable: 1 chip
- 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, 32 MB shared / 6 cores
- Other: None
- Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
- Storage: 125 GB on tmpfs
- Other: None

---

Page 1 Standard Performance Evaluation Corporation (info@spec.org) https://www.spec.org/
Dell Inc. PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)

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

Results Table

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<thead>
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</table>

SPECrate®2017_fp_base = 570
SPECrate®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/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
Virtualization Technology : Disabled
L1 Stride Prefetcher: : Disabled
NUMA Nodes per Socket : 4
L3 Cache as NUMA Domain : Enabled

(Continued on next page)
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 982a61ec0915b55891ef0e16aca6c64d
running on amd-sut Sun Dec 4 17:49:00 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 9474F 48-Core Processor
  1 "physical id"s (chips)
  96 "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: 48
  siblings: 96
  physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29
  32 33 34 35 36 37 40 41 42 43 44 45 48 49 50 51 52 53 56 57 58 59 60 61

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): 96
  On-line CPU(s) list: 0-95
  Vendor ID: AuthenticAMD
  Model name: AMD EPYC 9474F 48-Core Processor
  CPU family: 25
  Model: 17
  Thread(s) per core: 2
  Core(s) per socket: 48
  Socket(s): 1
  Stepping: 1
  Frequency boost: enabled
  CPU max MHz: 4114.0000
  CPU min MHz: 400.0000
  BogoMIPS: 7202.25
  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

(Continued on next page)
Platform Notes (Continued)

aperfmerp rapl pni pcmlmulqdq monitor ssse3 fma cx16 pcid sse4_1 sse4_2 x2apic movbe
popcnt aes xsave avx f16c rdrand lahf_lm cmp_legacy svm extatic cr8_legacy abm sse4a
misalignsse 3dnowprefetch osvw ibs skinit wdt tce topeext perfctr_core perfctr_nb
bpext perfctr_llc mwaitx cpb cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs
ibpb stibp vmcmap fgsbase bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f
avx512dq rdseed adv smap avx512ifma clflushopt clwb avx512cd sha ni avx512bw
avx512vl xsaveopt xsaves cqm_llc cqm_occuad_llc cqm_mbmm_total
cqm_mbb_local avx512_bf16 clzero irperf xsaeverptr 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 gfn i vaes vpclmulqdq avx512_vnni avx512_bitalg avx512_vpopcntdq
la57 rdpid overflow_recov succor smca fsrcm flush_l1d

Virtualization:                  AMD-V
L1d cache:                       1.5 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):               24-29,72-77
NUMA node2 CPU(s):               12-17,60-65
NUMA node3 CPU(s):               36-41,84-89
NUMA node4 CPU(s):               18-23,66-71
NUMA node5 CPU(s):               42-47,90-95
NUMA node6 CPU(s):               6-11,54-59
NUMA node7 CPU(s):               30-35,78-83
Vulnerability Itlb multihit:     Not affected
Vulnerability L1tf:              Not affected
Vulnerability Mds:               Not affected
Vulnerability Meltdown:          Not affected
Vulnerability Mitigation; Speculative Store Bypass disabled via
Vulnerability Spec store bypass:  prctl and seccomp
Vulnerability Spectre v1:        Mitigation; usercopy/swapgs barriers and __user
pointer sanitization
Vulnerability Spectre v2:        Mitigation; Retpolines, IBFB 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  1.5M  8 Data  1  64  1  64
L1i  32K  1.5M  8 Instruction  1  64  1  64
L2   1M   48M  8 Unified  2  2048 1  64
L3   32M  256M 16 Unified  3  32768 1  64
Dell Inc.  
PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)  

SPEC CPU®2017 Floating Point Rate Result  

Dell Inc.  

SPECrate®2017_fp_base = 570  
SPECrate®2017_fp_peak = Not Run

CPU2017 License: 6573  
Test Sponsor: Dell Inc.  
Test Date: Dec-2022  
Hardware Availability: Dec-2022

Tested by: Dell Inc.  
Software Availability: Nov-2022

Platform Notes (Continued)

/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: 8 nodes (0-7)
  node 0 cpus: 0 1 2 3 4 5 48 49 50 51 52 53
  node 0 size: 96311 MB
  node 0 free: 95594 MB
  node 1 cpus: 24 25 26 27 28 29 72 73 74 75 76 77
  node 1 size: 96763 MB
  node 1 free: 92552 MB
  node 2 cpus: 12 13 14 15 16 17 60 61 62 63 64 65
  node 2 size: 96764 MB
  node 2 free: 96106 MB
  node 3 cpus: 36 37 38 39 40 41 84 85 86 87 88 89
  node 3 size: 96763 MB
  node 3 free: 96120 MB
  node 4 cpus: 18 19 20 21 22 23 66 67 68 69 70 71
  node 4 size: 96764 MB
  node 4 free: 96088 MB
  node 5 cpus: 42 43 44 45 46 47 90 91 92 93 94 95
  node 5 size: 96763 MB
  node 5 free: 96118 MB
  node 6 cpus: 6 7 8 9 10 11 54 55 56 57 58 59
  node 6 size: 96764 MB
  node 6 free: 96115 MB
  node 7 cpus: 30 31 32 33 34 35 78 79 80 81 82 83
  node 7 size: 96687 MB
  node 7 free: 96037 MB
  node distances:
  node 0 1 2 3 4 5 6 7
  0: 10 11 12 12 12 12 12
  1: 11 10 12 12 12 12 12
  2: 12 12 10 11 12 12 12
  3: 12 12 11 10 12 12 12
  4: 12 12 12 12 10 11 12
  5: 12 12 12 12 11 10 12
  6: 12 12 12 12 12 12 11
  7: 12 12 12 12 12 12 12

From /proc/meminfo
  MemTotal: 792151856 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

(Continued on next page)
Dell Inc.

PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)

<table>
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<tr>
<th>SPECrate®2017_fp_base =</th>
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<tr>
<td>SPECrate®2017_fp_peak =</td>
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CPU2017 License: 6573
Test Sponsor: Dell Inc.
Test Date: Dec-2022
Tested by: Dell Inc.
Hardware Availability: Dec-2022
Software Availability: Nov-2022

Platform Notes (Continued)

/sbin/tuned-adm active
Current active profile: latency-performance

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has 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): Not affected
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: userscopy/swapgs barriers and __user pointer sanitization
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 2 23:19

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

Dell Inc. PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)

SPECrate®2017_fp_base = 570
SPECrate®2017_fp_peak = Not Run

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

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

Platform Notes (Continued)

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

From /sys/devices/virtual/dmi/id
Vendor: Dell Inc.
Product: PowerEdge R6615
Product Family: PowerEdge
Serial: GLM4018

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:
12x 802C0000802C MTC40F2046S1RC48BA1 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
--------------------------------------------------------------------------------

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**PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)**

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<td><strong>SPECrate®2017_fp_peak</strong></td>
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**Compiler Version Notes (Continued)**

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<td>C++, C</td>
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<td>Fortran</td>
<td>507.cactuBSSN_r(base)</td>
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AMD clang version 14.0.6 (CLANG: AOCC_4.0.0-Build#389 2022_10_07) (based on LLVM Mirror.Version.14.0.6)
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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)
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(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

Dell Inc.

PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)

 SPECrate®2017_fp_base = 570
 SPECrate®2017_fp_peak = Not Run

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

Compiler Version Notes (Continued)

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
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

(Continued on next page)
Dell Inc. PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor) SPECrate®2017_fp_base = 570
SPECrate®2017_fp_peak = Not Run

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

Base Portability Flags (Continued)
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 549.fotonik3d_r: -DSPEC_LP64 554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -flto -W1,-mlllvm -W1,-align-all-nofallthru-blocks=6
-W1,-mlllvm -W1,-reduce-array-computations=3
-W1,-mlllvm -W1,-ldist-scalar-expand -fenable-aggressive-gather -O3
-march=znver4 -fveclib=AMDLIBM -ffast-math -fstruct-layout=7
-mlllvm -unroll-threshold=50 -mlllvm -inline-threshold=1000
-fremap-arrays -fstrip-mining -mlllvm -reduce-array-computations=3
-zopt -lamdlibm -lamdalloc -lflang

C++ benchmarks:
-m64 -flto -W1,-mlllvm -W1,-align-all-nofallthru-blocks=6
-W1,-mlllvm -W1,-reduce-array-computations=3
-W1,-mlllvm -W1,-x86-use-vzeroupper=false -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -mlllvm -unroll-threshold=100
-fineline-aggressive -mlllvm -loop-unswitch-threshold=200000
-mlllvm -reduce-array-computations=3 -zopt -lamdlibm -lamdalloc
-lflang

Fortran benchmarks:
-m64 -flto -W1,-mlllvm -W1,-align-all-nofallthru-blocks=6
-W1,-mlllvm -W1,-reduce-array-computations=3
-W1,-mlllvm -W1,-enable-X86-prefetching -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -Kieee -Mrecursive -funroll-loops
-mlllvm -lrs-in-nested-loop -mlllvm -reduce-array-computations=3
-fepilog-vectorization-of-inductions -zopt -lamdlibm -lamdalloc
-lflang

Benchmarks using both Fortran and C:
-m64 -flto -W1,-mlllvm -W1,-align-all-nofallthru-blocks=6
-W1,-mlllvm -W1,-reduce-array-computations=3
-W1,-mlllvm -W1,-enable-X86-prefetching -O3 -march=znver4
-fveclib=AMDLIBM -ffast-math -fstruct-layout=7
-mlllvm -unroll-threshold=50 -mlllvm -inline-threshold=1000
-fremap-arrays -fstrip-mining -mlllvm -reduce-array-computations=3
-zopt -Kieee -Mrecursive -funroll-loops -mlllvm -lrs-in-nested-loop

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

Dell Inc.

PowerEdge R6615 (AMD EPYC 9474F 48-Core Processor)

SPECrater2017_fp_base = 570
SPECrater2017_fp_peak = Not Run

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

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
- fepilog-vectorization-of-inductions
- lamdlibm
- lamdalloc
- lflang

Benchmarks using both C and C++:
- 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
- -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
- -lamdalloc
- -lflang

Benchmarks using Fortran, C, and C++:
- m64
- flto
- Wl, -mllvm -Wl, -reduce-array-computations=3
- Wl, -mllvm -Wl, -x86-use-vzeroupper=false
- -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
- -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
- -lamdalloc
- -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 R6615 (AMD EPYC 9474F 48-Core Processor)

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**SPECrate®2017_fp_peak** = Not Run

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<tr>
<td>Software Availability</td>
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The flags files that were used to format this result can be browsed at:


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


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Tested with SPEC CPU®2017 v1.1.8 on 2022-12-04 12:49:00-0500.
Report generated on 2023-03-02 11:22:49 by CPU2017 PDF formatter v6442.
Originally published on 2023-02-28.