Dell Inc. PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

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

CPU Name: AMD EPYC 9654P
Max MHz: 3700
Nominal: 2400
Enabled: 96 cores, 1 chip
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: 384 MB I+D on chip per chip, 32 MB shared / 8 cores
Other: None
Memory: 768 GB (12 x 64 GB 2Rx4 PC5-4800B-R)
Storage: 125 GB on tmpfs
Other: None

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 0.5.3 released Nov-2022
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.

SPECsenergy2017_fp_base = 311
SPECsenergy2017_fp_peak = Not Run

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

Threads

603.bwaves_s 96
607.cactuBSSN_s 96
619.hm_s 96
621.wrf_s 96
627.cam4_s 96
628.pop2_s 96
638.imagick_s 96
644.nab_s 96
649.fotonik3d_s 96
654.roms_s 96

--- SPECsenergy2017_fp_base (311) ---
Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>96</td>
<td>69.4</td>
<td>580</td>
<td>69.4</td>
<td>850</td>
<td></td>
<td></td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>96</td>
<td>32.0</td>
<td>521</td>
<td>32.4</td>
<td>515</td>
<td></td>
<td></td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>96</td>
<td>28.7</td>
<td>183</td>
<td>28.5</td>
<td>184</td>
<td></td>
<td></td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>96</td>
<td>56.4</td>
<td>235</td>
<td>56.5</td>
<td>234</td>
<td></td>
<td></td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>96</td>
<td>42.6</td>
<td>208</td>
<td>42.6</td>
<td>208</td>
<td></td>
<td></td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>96</td>
<td>124</td>
<td>95.8</td>
<td>124</td>
<td>95.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>96</td>
<td>26.2</td>
<td>550</td>
<td>26.1</td>
<td>552</td>
<td></td>
<td></td>
</tr>
<tr>
<td>644.nab_s</td>
<td>96</td>
<td>23.3</td>
<td>751</td>
<td>23.2</td>
<td>752</td>
<td></td>
<td></td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>96</td>
<td>62.3</td>
<td>146</td>
<td>63.6</td>
<td>143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>654.roms_s</td>
<td>96</td>
<td>41.6</td>
<td>378</td>
<td>41.6</td>
<td>378</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

(Continued on next page)
Dell Inc.

PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

SPECspeed®2017_fp_base = 311
SPECspeed®2017_fp_peak = Not Run

Operating System Notes (Continued)

To enable Transparent Hugepages (THP) for all allocations, '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/defrag' run as root.
To disable THP for peak runs of 621.wrf_s:
'echo never > /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/defrag' run as root.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-95"
LD_LIBRARY_PATH = 
"/mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b/amd_speed_aocc400_genoa_B_lib/"
LIBOMP_NUM_HIDDEN_HELPER_THREADS = "0"
MALLOCS_CONF = "oversize_threshold:0,retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "96"

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"
SPEC CPU®2017 Floating Point Speed Result
Copyright 2017-2023 Standard Performance Evaluation Corporation

Dell Inc. PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

SPECspeed®2017_fp_base = 311
SPECspeed®2017_fp_peak = Not Run

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

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/cpu2017-1.1.8-aocc400-B1b/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acaf64d
running on amd-sut Sun Nov 13 17:13:51 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 9654P 96-Core Processor
- 96 "processors"

From /proc/cpuinfo
- 1 "physical id"s (chips)
- 96 "processors"

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

(Continued on next page)
Dell Inc.

PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

CPU2017 License: 6573
Test Sponsor: Dell Inc.
Test Date: Nov-2022
Tested by: Dell Inc.

Hardware Availability: Feb-2023
Software Availability: Nov-2022

SPECspeed®2017_fp_base = 311
SPECspeed®2017_fp_peak = Not Run

Platform Notes (Continued)

Vendor ID: AuthenticAMD
Model name: AMD EPYC 9654P 96-Core Processor
CPU family: 25
Model: 17
Thread(s) per core: 1
Core(s) per socket: 96
Socket(s): 1
Stepping: 1
Frequency boost: enabled
CPU max MHz: 3709.0000
CPU min MHz: 400.0000
BogoMIPS: 4801.51
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pg 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 aperf perf rapl rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperf perf rapl rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperf perf rapl rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperf perf rapl rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperf perf rapl rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperf perf rapl rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid extd_apicid aperf perf rapl rdtscp lm constant_tsc rep_good nopl nonstop_tsc cpuid
Virtualization: AMD-V
L1d cache: 3 MiB (96 instances)
L1i cache: 3 MiB (96 instances)
L2 cache: 96 MiB (96 instances)
L3 cache: 384 MiB (12 instances)
NUMA node(s): 12
NUMA node0 CPU(s): 0-7
NUMA node1 CPU(s): 32-39
NUMA node2 CPU(s): 64-71
NUMA node3 CPU(s): 16-23
NUMA node4 CPU(s): 48-55
NUMA node5 CPU(s): 80-87
NUMA node6 CPU(s): 24-31
NUMA node7 CPU(s): 56-63
NUMA node8 CPU(s): 88-95
NUMA node9 CPU(s): 8-15
NUMA node10 CPU(s): 40-47
NUMA node11 CPU(s): 72-79
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected

Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected

(Continued on next page)
Dell Inc. PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

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

SPECspeed®2017_fp_base = 311
SPECspeed®2017_fp_peak = Not Run

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

Platform Notes (Continued)

Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmie stalle 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 sanitation
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 3M 8 Data 1 64 1 64
L1i 32K 3M 8 Instruction 1 64 1 64
L2 1M 96M 8 Unified 2 2048 1 64
L3 32M 384M 16 Unified 3 32768 1 64

/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: 12 nodes (0-11)
    node 0 cpus: 0 1 2 3 4 5 6 7
    node 0 size: 64055 MB
    node 0 free: 63593 MB
    node 1 cpus: 32 33 34 35 36 37 38 39
    node 1 size: 64509 MB
    node 1 free: 64247 MB
    node 2 cpus: 64 65 66 67 68 69 70 71
    node 2 size: 64509 MB
    node 2 free: 64240 MB
    node 3 cpus: 16 17 18 19 20 21 22 23
    node 3 size: 64509 MB
    node 3 free: 64224 MB
    node 4 cpus: 48 49 50 51 52 53 54 55
    node 4 size: 64509 MB
    node 4 free: 64241 MB
    node 5 cpus: 80 81 82 83 84 85 86 87
    node 5 size: 64509 MB
    node 5 free: 64276 MB
    node 6 cpus: 24 25 26 27 28 29 30 31
    node 6 size: 64509 MB
    node 6 free: 64191 MB

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

Dell Inc.

PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

<table>
<thead>
<tr>
<th>CPU2017 License: 6573</th>
<th>Test Date: Nov-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>

### Platform Notes (Continued)

node 7 cpus: 56 57 58 59 60 61 62 63
node 7 size: 64509 MB
node 7 free: 64275 MB
node 8 cpus: 88 89 90 91 92 93 94 95
node 8 size: 64463 MB
node 8 free: 64229 MB
node 9 cpus: 8 9 10 11 12 13 14 15
node 9 size: 64509 MB
node 9 free: 64285 MB
node 10 cpus: 40 41 42 43 44 45 46 47
node 10 size: 64474 MB
node 10 free: 64209 MB
node 11 cpus: 72 73 74 75 76 77 78 79
node 11 size: 64509 MB
node 11 free: 60644 MB
node distances:
node 0 1 2 3 4 5 6 7 8 9 10 11
0: 10 11 11 11 11 11 11 11 11 11 11

From /proc/meminfo
MemTotal: 792149164 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 performance

/usr/bin/lsb_release -d
Ubuntu 22.04.1 LTS

From /etc/*release* /etc/*version*
debian_version: bookworm/sid
os-release: 

(Continued on next page)
Dell Inc.  

PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)  

SPECspeed®2017_fp_base = 311  
**SPECspeed®2017_fp_peak = Not Run**

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

### Platform Notes (Continued)

```plaintext
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: usercopy/swapsps barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Retpolines, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Nov 13 03:04

SPEC is set to: /mnt/ramdisk/cpu2017-1.1.8-aocc400-B1b

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Type</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>tmpfs</td>
<td>tmpfs</td>
<td>125G</td>
<td>3.4G</td>
<td>122G</td>
<td>3%</td>
<td>/mnt/ramdisk</td>
</tr>
</tbody>
</table>

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
Dell Inc.

PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

SPECspeed®2017_fp_base = 311
SPECspeed®2017_fp_peak = Not Run

Platform Notes (Continued)

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: 0.5.3
BIOS Date: 11/10/2022
BIOS Revision: 0.5

(End of data from sysinfo program)

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

(Continued on next page)
## Dell Inc.

PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base = 311</th>
<th>SPECspeed®2017_fp_peak = Not Run</th>
</tr>
</thead>
</table>

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

### Compiler Version Notes (Continued)

**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
```

**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
```

### 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.cactusBSSN_s: -DSPEC_LP64`
- `619.lbm_s: -DSPEC_LP64`

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

**Dell Inc.**

PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>311</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

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

**Base Portability Flags (Continued)**

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

**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 -lamdaloc -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 -lrs-in-nested-loop
- -mllvm -reduce-array-computations=3 -zopt -fopenmp=libomp -lomp
- -lamdlibm -lamdaloc -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 -lrs-in-nested-loop -fopenmp=libomp -lomp
- -lamdlibm -lamdaloc -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

(Continued on next page)
\textbf{SPEC CPU®2017 Floating Point Speed Result}

\textbf{Dell Inc.}

\begin{tabular}{|l|l|}
\hline
PowerEdge R6615 (AMD EPYC 9654P 96-Core Processor) & SPECspeed®2017\_fp\_base = 311 \\
\hline
\end{tabular}

\begin{tabular}{|l|l|}
\hline
SPECspeed®2017\_fp\_peak = Not Run & \\
\hline
\end{tabular}

\begin{tabular}{|l|l|}
\hline
CPU2017 License: 6573 & Test Date: Nov-2022 \\
Test Sponsor: Dell Inc. & Hardware Availability: Feb-2023 \\
Tested by: Dell Inc. & Software Availability: Nov-2022 \\
\hline
\end{tabular}

\textbf{Base Optimization Flags (Continued)}

\textbf{Benchmarks using Fortran, C, and C++ (continued):}
-llvm -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 -lamdllibm -lamdalloc
-lflang

\textbf{Base Other Flags}

\textbf{C benchmarks:}
-Wno-return-type -Wno-unused-command-line-argument

\textbf{Fortran benchmarks:}
-Wno-unused-command-line-argument

\textbf{Benchmarks using both Fortran and C:}
-Wno-return-type -Wno-unused-command-line-argument

\textbf{Benchmarks using Fortran, C, and C++:}
-Wno-return-type -Wno-unused-command-line-argument

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-AMD-EPYC-v1.0.xml

\textbf{The flags files that were used to format this result can be browsed at}
http://www.spec.org/cpu2017/flags/aocc400-flags.html

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.

Report generated on 2023-02-01 18:19:44 by CPU2017 PDF formatter v6442.
Originally published on 2023-02-01.