# SPEC CPU®2017 Floating Point Speed Result

## Lenovo Global Technology

**ThinkSystem SR635**

3.20 GHz, AMD EPYC 74F3

| SPECspeed®2017_fp_base | 139 |
| SPECspeed®2017_fp_peak | 140 |

### CPU2017 License:

9017

### Test Sponsor:

Lenovo Global Technology

### Tested by:

Lenovo Global Technology

| Test Date | Aug-2021 |
| Hardware Availability | Jun-2021 |
| Software Availability | Mar-2021 |

### Hardware

<table>
<thead>
<tr>
<th>Threads</th>
<th>SPECspeed®2017_fp_base (139)</th>
<th>SPECspeed®2017_fp_peak (140)</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>24</td>
<td>207</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>24</td>
<td>208</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>24</td>
<td>69.0</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>24</td>
<td>70.2</td>
</tr>
<tr>
<td>627.cam4_s</td>
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<tr>
<td>628.pop2_s</td>
<td>24</td>
<td>87.8</td>
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<tr>
<td>638.imagick_s</td>
<td>24</td>
<td>145</td>
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<tr>
<td>644.nab_s</td>
<td>24</td>
<td>215</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>24</td>
<td>73.3</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>24</td>
<td>148</td>
</tr>
<tr>
<td>Software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS:</td>
<td>SUSE Linux Enterprise Server 15 SP2 (x86_64)</td>
<td></td>
</tr>
<tr>
<td>Compiler:</td>
<td>C/C++/Fortran: Version 3.0.0 of AOCC</td>
<td></td>
</tr>
<tr>
<td>Parallel:</td>
<td>Yes</td>
<td></td>
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<tr>
<td>Firmware:</td>
<td>Lenovo BIOS Version CFE125U 6.0 released May-2021</td>
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<tr>
<td>File System:</td>
<td>xfs</td>
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<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
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<tr>
<td>Base Pointers:</td>
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<tr>
<td>Peak Pointers:</td>
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<tr>
<td>Power Management:</td>
<td>BIOS and OS set to prefer performance at the cost of additional power usage</td>
<td></td>
</tr>
</tbody>
</table>

### Software

#### CPU Name:

AMD EPYC 74F3

#### Max MHz:

4000

#### Nominal:

3200

#### Enabled:

24 cores, 1 chip

#### Orderable:

1 chip

#### Cache L1:

32 KB I + 32 KB D on chip per core

#### L2:

512 KB I+D on chip per core

#### L3:

256 MB I+D on chip per chip, 32 MB shared / 3 cores

#### Other:

None

#### Memory:

256 GB (8 x 32 GB 2Rx4 PC4-3200AA-R)

#### Storage:

1 x 960 GB SATA SSD

#### Other:

None
**SPEC CPU®2017 Floating Point Speed Result**

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**Lenovo Global Technology**

ThinkSystem SR635 3.20 GHz, AMD EPYC 7F3

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**SPECspeed®2017_fp_base = 139**

**SPECspeed®2017_fp_peak = 140**

---

**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology  
**Test Date:** Aug-2021  
**Hardware Availability:** Jun-2021  
**Software Availability:** Mar-2021

---

**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>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
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<td>603.bwaves_s</td>
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<td>365</td>
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<tr>
<td>607.cactuBSSN_s</td>
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<td>81.0</td>
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<td>96.5</td>
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</tr>
</tbody>
</table>

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**Compiler Notes**

The AMD64 AOCC Compiler Suite is available at  
http://developer.amd.com/amd-aocc/

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**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  
'ulimit -l 2097152' was used to set environment locked pages in memory limit  
runcpu command invoked through numaclt i.e.:  
numactl --interleave=all runcpu <etc>  
'echo 8 > /proc/sys/vm/dirty_ratio' run as root to limit dirty cache to 8% of memory.  
'echo 1 > /proc/sys/vm/swappiness' run as root to limit swap usage to minimum necessary.  
'echo 1 > /proc/sys/vm/zone_reclaim_mode' run as root to free node-local memory and avoid remote memory usage.  
'sync; echo 3 > /proc/sys/vm/drop_caches' run as root to reset filesystem caches.  
'sysctl -w kernel.randomize_va_space=0' run as root to disable address space layout randomization (ASLR) to reduce run-to-run variability.  
To enable Transparent Hugepages (THP) for all allocations,  
'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and

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Operating System Notes (Continued)

'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.
To enable THP only on request for peak runs of 628.pop2_s, and 638.imagick_s,
'echo madvise > /sys/kernel/mm/transparent_hugepage/enabled' run as root.
To disable THP for peak runs of 627.cam4_s, 644.nab_s, 649.fotonik3d_s, and 654.roms_s,
'echo never > /sys/kernel/mm/transparent_hugepage/enabled' run as root.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-23"
LD_LIBRARY_PATH = 
"/home/cpu2017-1.1.8-amd-aocc300-milan-B1/amd_speed_aocc300_milan_B_lib/
64;/home/cpu2017-1.1.8-amd-aocc300-milan-B1/amd_speed_aocc300_milan_B_lib/
64;";
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "24"

Environment variables set by runcpu during the 607.cactuBSSN_s peak run:
GOMP_CPU_AFFINITY = "0-23"

Environment variables set by runcpu during the 619.lbm_s peak run:
GOMP_CPU_AFFINITY = "0-23"

Environment variables set by runcpu during the 654.roms_s peak run:
GOMP_CPU_AFFINITY = "0-23"

General Notes

Binaries were compiled on a system with 2x AMD EPYC 7742 CPU + 1TiB Memory using openSUSE 15.2

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.

jemalloc: configured and built with GCC v4.8.2 in RHEL 7.4 (No options specified)
jemalloc 5.1.0 is available here:
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2
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Test Date: Aug-2021
Tested by: Lenovo Global Technology
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Platform Notes

BIOS configuration:
Choose Operating Mode set to Maximum Performance
L1 Stream HW Prefetcher set to Disable
SOC P-states set to P0
SMT Mode set to Disable

Sysinfo program /home/cpu2017-1.1.8-amd-aocc300-milan-B1/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16a0c64d
running on localhost Fri Aug 27 01:13:41 2021

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 74F3 24-Core Processor
1 "physical id"s (chips)
24 "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 : 24
siblings : 24
physical 0: cores 0 1 2 4 5 6 8 9 10 12 13 14 16 17 18 20 21 22 24 25 26 28 29 30

From lscpu from util-linux 2.33.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 48 bits physical, 48 bits virtual
CPU(s): 24
On-line CPU(s) list: 0-23
Thread(s) per core: 1
Core(s) per socket: 24
Socket(s): 1
NUMA node(s): 1
Vendor ID: AuthenticAMD
CPU family: 25
Model: 1
Model name: AMD EPYC 74F3 24-Core Processor
Stepping: 1
CPU MHz: 2797.666
CPU max MHz: 3200.0000
CPU min MHz: 1500.0000
BogoMIPS: 6387.92
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K

(Continued on next page)
Platform Notes (Continued)

L2 cache: 512K
L3 cache: 32768K
NUMA node0 CPU(s): 0-23
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 extapic idt nmi lmx2 ie

From /proc/cpuinfo cache data
  cache size: 512 KB

From numactl --hardware
WARNING: a numactl 'node' might or might not correspond to a physical chip.
  available: 1 nodes (0)
    node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
    node 0 size: 257607 MB
    node 0 free: 257081 MB
    node distances:
      node   0
      0: 10

From /proc/meminfo
  MemTotal: 263790152 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB

/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance

From /etc/*release* /etc/*version*
  os-release:
    NAME="SLES"
    VERSION="15-SP2"
    VERSION_ID="15.2"
    PRETTY_NAME="SUSE Linux Enterprise Server 15 SP2"
    ID="sles"
    ID_LIKE="suse"
    ANSI_COLOR="0;32"
    CPE_NAME="cpe:/o:suse:sles:15:sp2"

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

uname -a:
```
Linux localhost 5.3.18-22-default #1 SMP Wed Jun 3 12:16:43 UTC 2020 (720aeba) 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):** Mitigation: Speculative Store Bypass disabled via prctl and seccomp
- **CVE-2018-3639 (Speculative Store Bypass):** Mitigation: usercopy/swapgs barriers and __user pointer sanitization
- **CVE-2017-5753 (Spectre variant 1):** Not affected
- **CVE-2017-5715 (Spectre variant 2):** Mitigation: Full AMD retpoline, IBFB: 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 Aug 27 00:44

SPEC is set to: /home/cpu2017-1.1.8-amd-aocc300-milan-B1
```
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda3      xfs   892G   83G  809G  10% /
```

From /sys/devices/virtual/dmi/id
Vendor: Lenovo
Product: ThinkSystem SR635 -[7Y00000000]-
Product Family: ThinkSystem
Serial: 0123456789

Additional information from dmidecode 3.2 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:
- 8x Samsung M393A4K40DB3-CWE 32 GB 2 rank 3200
- 8x Unknown Unknown

BIOS:
- BIOS Vendor: Lenovo
- BIOS Version: CFE125U
- BIOS Date: 05/28/2021

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Platform Notes (Continued)

BIOS Revision: 6.0

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C
| 619.lbm_s(base, peak) 638.imagick_s(base, peak)
| 644.nab_s(base, peak)
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
==============================================================================
C++, C, Fortran
| 607.cactuBSSN_s(base, peak)
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
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Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
==============================================================================
Fortran
| 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak)
| 654.roms_s(base, peak)
AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
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Compiler Version Notes (Continued)

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

AMD clang version 12.0.0 (CLANG: AOCC_3.0.0-Build#78 2020_12_10) (based on
LLVM Mirror.Version.12.0.0)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/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

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Base Portability Flags (Continued)

654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
- m64 -mno-adx -mno-sse4a -Wl, -ml1vm -Wl, -region-vectorize
- Wl, -ml1vm -Wl, -function-specialize
- Wl, -ml1vm -Wl, -align-all-nofallthru-blocks=6
- Wl, -ml1vm -Wl, -reduce-array-computations=3 -O3 -march=znver3
- fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
- ml1vm -unroll-threshold=50 -ml1vm -inline-threshold=1000
- freemap-arrays -ml1vm -function-specialize -flv-function-specialization
- ml1vm -enable-gvn-hoist -ml1vm -global-vectorize-slp=true
- ml1vm -enable-lcim-vrp -ml1vm -reduce-array-computations=3 -z muldefs
- DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
- -lflang -lflangrti

Fortran benchmarks:
- m64 -mno-adx -mno-sse4a -Wl, -ml1vm -Wl, -enable-X86-prefetching
- Wl, -ml1vm -Wl, -enable-lcim-vrp -Wl, -ml1vm -Wl, -region-vectorize
- Wl, -ml1vm -Wl, -function-specialize
- Wl, -ml1vm -Wl, -align-all-nofallthru-blocks=6
- Wl, -ml1vm -Wl, -reduce-array-computations=3 -Hz,1,0x1 -O3
- march=znver3 -fveclib=AMDLIBM -ffast-math -Mrecursive
- ml1vm -fuse-tile-inner-loop -funroll-loops
- ml1vm -extra-vectorizer-passes -ml1vm -lsr-in-nested-loop
- ml1vm -enable-lcim-vrp -ml1vm -reduce-array-computations=3
- ml1vm -global-vectorize-slp=true -z muldefs -DSPEC_OPENMP -fopenmp
- -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang -lflangrti

Benchmarks using both Fortran and C:
- m64 -mno-adx -mno-sse4a -Wl, -ml1vm -Wl, -enable-X86-prefetching
- Wl, -ml1vm -Wl, -enable-lcim-vrp -Wl, -ml1vm -Wl, -region-vectorize
- Wl, -ml1vm -Wl, -function-specialize
- Wl, -ml1vm -Wl, -align-all-nofallthru-blocks=6
- Wl, -ml1vm -Wl, -reduce-array-computations=3 -O3 -march=znver3
- fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
- ml1vm -unroll-threshold=50 -ml1vm -inline-threshold=1000
- freemap-arrays -ml1vm -function-specialize -flv-function-specialization
- ml1vm -enable-gvn-hoist -ml1vm -global-vectorize-slp=true
- ml1vm -enable-lcim-vrp -ml1vm -reduce-array-computations=3 -Hz,1,0x1
- Mrecursive -ml1vm -fuse-tile-inner-loop -funroll-loops
- ml1vm -extra-vectorizer-passes -ml1vm -lsr-in-nested-loop -z muldefs
- DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc

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SPEC CPU®2017 Floating Point Speed Result

Lenovo Global Technology
ThinkSystem SR635
3.20 GHz, AMD EPYC 74F3

SPECspeed®2017_fp_base = 139
SPECspeed®2017_fp_peak = 140

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Test Date: Aug-2021
Tested by: Lenovo Global Technology
Hardware Availability: Jun-2021
Software Availability: Mar-2021

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
- lflang -lflangrti

Benchmarks using Fortran, C, and C++:
- m64 -mno-adx -mno-sse4a -std=c++98
- -Wl,-mllvm -Wl,-x86-use-vzeroupper=false
- -Wl,-mllvm -Wl,-region-vectorize -Wl,-mllvm -Wl,-function-specialize
- -Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
- -Wl,-mllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
- -fvecclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
- -mllvm -unroll-threshold=50 -mllvm -inline-threshold=1000
- -fremap-arrays -mllvm -function-specialize -flv-function-specialization
- -mllvm -enable-gvn-hoist -mllvm -global-vectorize-slp=true
- -mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
- -mllvm -enable-partial-unswitch -mllvm -unroll-threshold=100
- -finline-aggressive -mllvm -loop-unswitch-threshold=200000
- -mllvm -reroll-loops -mllvm -aggressive-loop-unswitch
- -mllvm -extra-vectorizer-passes -mllvm -convert-pow-exp-to-int=false
- -Hz,1,0x1 -Mrecursive -mllvm -fuse-tile-inner-loop -funroll-loops
- -mllvm -lsr-in-nested-loop -z muldefs -DSPEC_OPENMP -fopenmp
- -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang -lflangrti

Base Other Flags

C benchmarks:
- Wno-unused-command-line-argument -Wno-return-type

Fortran benchmarks:
- Wno-unused-command-line-argument -Wno-return-type

Benchmarks using both Fortran and C:
- Wno-unused-command-line-argument -Wno-return-type

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

Peak Compiler Invocation

C benchmarks:
clang

(Continued on next page)
Peak Compiler Invocation (Continued)

Fortran benchmarks:
flang

Benchmarks using both Fortran and C:
flang clang

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

619.lbm_s: -m64 -mno-adx -mno-sse4a
-WL,-mllv -Wl,-function-specialize
-WL,-mllv -Wl,-align-all-nofallthru-blocks=6
-WL,-mllv -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=5 -mllv -unroll-threshold=50
-fremap-arrays -flv-function-specialization
-mllv -inline-threshold=1000 -mllv -enable-gvn-hoist
-mllv -global-vectorize-slp=true
-mllv -function-specialize -mllv -enable-licm-vrp
-mllv -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -landlibm -ljemalloc -lflang

638.imagick_s: basepeak = yes

644.nab_s: basepeak = yes

Fortran benchmarks:

603.bwaves_s: basepeak = yes

649.fotonik3d_s: basepeak = yes

654.roms_s: -m64 -mno-adx -mno-sse4a
-WL,-mllv -Wl,-enable-X86-prefetching

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

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Lenovo Global Technology
ThinkSystem SR635
3.20 GHz, AMD EPYC 74F3

SPECspeed® 2017_fp_base = 139
SPECspeed® 2017_fp_peak = 140

CPU2017 License: 9017
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Software Availability: Mar-2021

Peak Optimization Flags (Continued)

654.roms_s (continued):
-Wl,-mllvm -Wl,-enable-licm-vrp
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -Mrecursive
-mllvm -reduce-array-computations=3
-mllvm -global-vectorize-slp=true -mllvm -enable-licm-vrp
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-ljemalloc -lflang

Benchmarks using both Fortran and C:
621.wrf_s: basepeak = yes
627.cam4_s: basepeak = yes
628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:
-m64 -mno-adx -mno-sse4a -std=c++98
-Wl,-mllvm -Wl,-x86-use-vzeroupper=false -Wl,-mllvm -Wl,-enable-licm-vrp
-Wl,-mllvm -Wl,-function-specialize
-Wl,-mllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mllvm -Wl,-reduce-array-computations=3 -Ofast -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mllvm -unroll-threshold=50 -fremap-arrays -flv-function-specialization
-mllvm -inline-threshold=1000 -mllvm -enable-gvn-hoist
-mllvm -global-vectorize-slp=true -mllvm -function-specialize
-mllvm -enable-licm-vrp -mllvm -reduce-array-computations=3
-finline-aggressive -mllvm -unroll-threshold=100 -mllvm -reroll-loops
-mllvm -aggressive-loop-unswitch -Mrecursive -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

Peak Other Flags

C benchmarks:
-Wno-unused-command-line-argument -Wno-return-type

Fortran benchmarks:
-Wno-unused-command-line-argument -Wno-return-type

Benchmarks using both Fortran and C:
-Wno-unused-command-line-argument -Wno-return-type

(Continued on next page)
## Lenovo Global Technology

**ThinkSystem SR635**  
3.20 GHz, AMD EPYC 74F3

### SPEC CPU2017 Floating Point Speed Result

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**CPU2017 License:** 9017  
**Test Sponsor:** Lenovo Global Technology  
**Tested by:** Lenovo Global Technology

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</table>

### Peak Other Flags (Continued)

Benchmarks using Fortran, C, and C++:

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

The flags files that were used to format this result can be browsed at

http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Milan1P-G.html  

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

http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Milan1P-G.xml  