## Lenovo Global Technology

**ThinkSystem SR645**  
3.70 GHz, AMD EPYC 72F3

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>9017</th>
<th>Test Date:</th>
<th>Mar-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Lenovo Global Technology</td>
<td>Hardware Availability:</td>
<td>Apr-2021</td>
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<td>Tested by:</td>
<td>Lenovo Global Technology</td>
<td>Software Availability:</td>
<td>Mar-2021</td>
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### SPECspeed®2017_fp_base = 131

### SPECspeed®2017_fp_peak = 139

<table>
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<tr>
<th>Threads</th>
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<th>SPECspeed®2017_fp_peak (139)</th>
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<tr>
<td>16</td>
<td>603.bwaves_s</td>
<td>607.cactuBSSN_s</td>
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<tr>
<td></td>
<td>619.lbm_s</td>
<td>621.wrf_s</td>
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<td>627.cam4_s</td>
<td>628.pop2_s</td>
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<td></td>
<td>638.imagick_s</td>
<td>644.nab_s</td>
</tr>
<tr>
<td></td>
<td>649.fotonik3d_s</td>
<td>654.roms_s</td>
</tr>
</tbody>
</table>

### Software

- **OS:** SUSE Linux Enterprise Server 15 SP2 (x86_64)  
  Kernel 5.3.18-22-default
- **Compiler:** C/C++/Fortran: Version 3.0.0 of AOCC
- **Parallel:** Yes
- **Firmware:** Lenovo BIOS Version D8E115E 2.01 released Mar-2021
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** jemalloc: jemalloc memory allocator library v5.1.0
- **Power Management:** BIOS set to prefer performance at the cost of additional power usage

### Hardware

- **CPU Name:** AMD EPYC 72F3
- **Max MHz:** 4100
- **Nominal:** 3700
- **Enabled:** 16 cores, 2 chips
- **Orderable:** 1,2 chips
- **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 per core
- **Other:** None
- **Memory:** 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R)
- **Storage:** 1 x 960 GB SATA SSD
- **Other:** None
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CPU2017 License: 9017
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Results Table

<table>
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</table>

SPECspeed®2017_fp_base = 131
SPECspeed®2017_fp_peak = 139

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
'ulimit -l 2097152' was used to set environment locked pages in memory limit
runcpu command invoked through numacl1 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

(Continued on next page)
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SPECs®2017_fp_base = 131
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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 = "0-15"
LD_LIBRARY_PATH =
"/home/cpu2017-1.1.5-amd-aocc300-milan-A1/amd_speed_aocc300_milan_A_lib/64;/home/cpu2017-1.1.5-amd-aocc300-milan-A1/amd_speed_aocc300_milan_A_lib/32;"
MALLOCONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "16"

Environment variables set by runcpu during the 607.cactuBSSN_s peak run:
GOMP_CPU_AFFINITY = "0-15"

Environment variables set by runcpu during the 619.lbm_s peak run:
GOMP_CPU_AFFINITY = "0 8 1 9 2 10 3 11 4 12 5 13 6 14 7 15"

Environment variables set by runcpu during the 654.roms_s peak run:
GOMP_CPU_AFFINITY = "0-15"

General Notes
Binaries were compiled on a system with 2x AMD EPYC 7713 CPU + 512GiB Memory using RHEL 8.2

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
## Platform Notes

BIOS configuration:
- Operating Mode set to Maximum Performance and then set it to Custom Mode
- 4-Link xGMI Max Speed set to 16Gbps
- SOC P-States set to P0
- SMT Mode set to Disable
- DLWM Support set to Disabled

Sysinfo program `/home/cpu2017-1.1.5-amd-aocc300-milan-A1/bin/sysinfo`
Rev: r6538 of 2020-09-24 e8664e66d2d7080afeaa89d4b38e2f1c
running on localhost Sat Apr 18 01:03:55 2020

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 72F3 8-Core Processor
- 2 "physical id"s (chips)
- 16 "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 : 8
  - siblings : 8
  - physical 0: cores 0 1 2 3 4 5 6 7
  - physical 1: cores 0 1 2 3 4 5 6 7

From `lscpu`:
- 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): 16
- On-line CPU(s) list: 0-15
- Thread(s) per core: 1
- Core(s) per socket: 8
- Socket(s): 2
- NUMA node(s): 2
- Vendor ID: AuthenticAMD
- CPU family: 25
- Model: 1
- Model name: AMD EPYC 72F3 8-Core Processor
- Stepping: 1
- CPU MHz: 3234.425
- CPU max MHz: 3700.0000
- CPU min MHz: 1500.0000
- BogoMIPS: 7386.34
- Virtualization: AMD-V

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

**Lenovo Global Technology**

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**SPECspeed®2017_fp_base = 131**  
**SPECspeed®2017_fp_peak = 139**

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**Platform Notes (Continued)**

L1d cache: 32K  
L1i cache: 32K  
L2 cache: 512K  
L3 cache: 32768K  
NUMA node0 CPU(s): 0-7  
NUMA node1 CPU(s): 8-15  
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 aperfmperf pni pclmulqdq  
monitor ssse3 fma cx16 pcid sse4_1 sse4_2 movbe popcnt aes avx f16c rdrand  
lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw  
isb skinit wdt tce topoext perfctr_core perfctr_nb bpext perfctr_llc mwaitx cpb  
cat_l3 cdp_l3 invpcid_single hw_pstate ssbd mba ibrs ibpb stibp vmmcall fsbgbase  
bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a rdseed adx clflushopt clwb sha_ni  
xsavexp txsaves xsavec xgetbv1 xsave xsavec qm_mbb_total qm_mbb_local  
clzero irperf xsaveerptr wbnoinvd arat npt lbv svm_lock nrip_save tsc_scale  
vmbc_clean flushbyasid decodeassists pausefilter pfthreshold vmsave_vmload vgif  
umip pku ospke vaes vpcmulqdq rdpid overflow_reco eq succor smca

From numactl --hardware  WARNING: a numactl 'node' might or might not correspond to a  
physical chip.  
  available: 2 nodes (0-1)  
    node 0 cpus: 0 1 2 3 4 5 6 7  
    node 0 size: 257841 MB  
    node 0 free: 257370 MB  
    node 1 cpus: 8 9 10 11 12 13 14 15  
    node 1 size: 258007 MB  
    node 1 free: 257746 MB  
    node distances:  
      node 0 1  
        0: 10 32  
        1: 32 10

From /proc/meminfo  
MemTotal: 528229644 kB  
MemFree: 2048 kB

From /proc/cpuinfo  
 加工: 512 KB

From /etc/*release* /etc/*version*
  os-release: NAME="SLES"
Lenovo Global Technology  
ThinkSystem SR645  
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| SPECspeed®2017_fp_base = 131 |
| SPECspeed®2017_fp_peak = 139 |

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Test Sponsor: Lenovo Global Technology  
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Test Date: Mar-2021  
Hardware Availability: Apr-2021  
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Platform Notes (Continued)

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"

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
CVE-2018-3639 (Speculative Store Bypass): Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1): Mitigation: usercopy/swapgs
CVE-2017-5715 (Spectre variant 2): barriers and __user pointer
CVE-2020-0543 (Special Register Buffer Data Sampling): Mitigation: Full AMD retpoline,
run-level 3 Apr 17 21:13

SPEC is set to: /home/cpu2017-1.1.5-amd-aocc300-milan-A1

Memory:

(Continued on next page)

From /sys/devices/virtual/dmi/id
Vendor: Lenovo
Product: ThinkSystem SR645 MB
Product Family: ThinkSystem
Serial: 1234567890

Additional information from dmidecode 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.

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Platform Notes (Continued)

16x Samsung M393A4K40DB3-CWE 32 GB 2 rank 3200
16x Unknown Unknown

BIOS:
BIOS Vendor: Lenovo
BIOS Version: D8E115E-2.01
BIOS Date: 03/04/2021
BIOS Revision: 2.1
Firmware Revision: 3.1

(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
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Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /opt/AMD/aocc-compiler-3.0.0/bin
------------------------------------------------------------------------------

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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

Compiler Version Notes (Continued)

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

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 Portability Flags

603.bwaves_s: -DSPEC_LP64

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SPECCPU®2017 Floating Point Speed Result

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Base Portability Flags (Continued)

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

Base Optimization Flags

C benchmarks:
- m64 -mno-adx -mno-sse4a -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
- fveclib=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 -z muldefs
- DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamlbimb -ljemalloc
- llflang -llflangrti

Fortran benchmarks:
- m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-enable-X86-prefetching
- Wl,-mllvm -Wl,-enable-licm-vrp -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 -Hz,1,0x1 -O3
- march=znver3 -fveclib=AMDLIBM -ffast-math -Mrecursive
- mllvm -fuse-tile-inner-loop -funroll-loops
- mllvm -extra-vectorizer-passes -mllvm -lrm-llvm
- mllvm -global-vectorizer-slp=true -z muldefs -DSPEC_OPENMP -fopenmp
- fopenmp=libomp -lomp -lamlbimb -ljemalloc -llflang -llflangrti

Benchmarks using both Fortran and C:
- m64 -mno-adx -mno-sse4a -Wl,-mllvm -Wl,-enable-X86-prefetching
- Wl,-mllvm -Wl,-enable-licm-vrp -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

(Continued on next page)
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<td>SPECspeed®2017_fp_peak</td>
<td>139</td>
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</table>

### Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

- `fveclib=AMDLIBM`  
- `-ffast-math`  
- `-flto`  
- `-fstruct-layout=5`  
- `-mllvm -unroll-threshold=50`  
- `-mllvm -inline-threshold=1000`  
- `-fremap-arrays`  
- `-mllvm -function-specialize`  
- `-mllvm -global-vectorize-slp=true`  
- `-mllvm -enable-gvn-hoist`  
- `-mllvm -global-vectorize-slp=true`  
- `-Mrecursive`  
- `-mllvm -extra-vectorizer-passes`  
- `-mllvm -lsr-in-nested-loop`  
- `-z muldefs`  
- `-DSPEC_OPENMP`  
- `-fopenmp`  
- `-fopenmp=libomp`  
- `-lomp`  
- `-lamdlibm`  
- `-ljemalloc`  
- `-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`  
- `-fveclib=AMDLIBM`  
- `-ffast-math`  
- `-flto`  
- `-fstruct-layout=5`  
- `-mllvm -unroll-threshold=50`  
- `-mllvm -inline-threshold=1000`  
- `-fremap-arrays`  
- `-mllvm -function-specialize`  
- `-mllvm -global-vectorize-slp=true`  
- `-mllvm -enable-gvn-hoist`  
- `-mllvm -global-vectorize-slp=true`  
- `-Mrecursive`  
- `-mllvm -extra-vectorizer-passes`  
- `-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`
Lenovo Global Technology
ThinkSystem SR645
3.70 GHz, AMD EPYC 72F3

SPECspeed®2017_fp_base = 131
SPECspeed®2017_fp_peak = 139

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

Peak 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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

619.lbm_s: -m64 -mno-adx -mno-sse4a
-W1, -mlllvm -W1, -function-specialize
-W1, -mlllvm -W1, -align-all-nofallthru-blocks=6
-W1, -mlllvm -W1, -reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -fito
-fstruct-layout=5 -mlllvm -unroll-threshold=50
-freemap-arrays -flv-function-specialization
-mlllvm -inline-threshold=1000 -mlllvm -enable-gvn-hoist
-mlllvm -global-vectorize-slp=true
-mlllvm -function-specialize -mlllvm -enable-lcm-vrp
-mlllvm -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

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Peak Optimization Flags (Continued)

649. fotonik3d_s: basepeak = yes

654. roms_s: -m64 -mno-adx -mno-sse4a
-Wl, -mlivm -Wl,-enable-X86-prefetching
-Wl, -mlivm -Wl,-enable-licm-vrp
-Wl, -mlivm -Wl,-function-specialize
-Wl, -mlivm -Wl,-align-all-nofallthru-blocks=6
-Wl, -mlivm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -Mrecursive
-mlivm -reduce-array-computations=3
-mlivm -global-vectorize-slp=true -mlivm -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, -mlivm -Wl,-x86-use-vzeroupper=false -Wl, -mlivm -Wl,-enable-licm-vrp
-Wl, -mlivm -Wl,-function-specialize
-Wl, -mlivm -Wl,-align-all-nofallthru-blocks=6
-Wl, -mlivm -Wl,-reduce-array-computations=3 -Ofast -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -fstruct-layout=5
-mlivm -unroll-threshold=50 -fremap-arrays -flv-function-specialization
-mlivm -inline-threshold=1000 -mlivm -enable-gvn-hoist
-mlivm -global-vectorize-slp=true -mlivm -function-specialize
-mlivm -enable-licm-vrp -mlivm -reduce-array-computations=3
-finline-agressive -mlivm -unroll-threshold=100 -mlivm -reroll-loops
-mlivm -aggressive-loop-unswitch -Mrecursive -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

Peak Other Flags

C benchmarks:
-#no-unused-command-line-argument -#no-return-type

Fortran benchmarks:
-#no-unused-command-line-argument -#no-return-type

(Continued on next page)
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Peak Other Flags (Continued)

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

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-Milan-C.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-Milan-C.xml

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