## Lenovo Global Technology

**ThinkSystem SR665**  
2.00 GHz, AMD EPYC 7713  

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>607.cactuBSSN_s</td>
<td>242</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>621.wrf_s</td>
<td>128</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>628.pop2_s</td>
<td>128</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>644.nab_s</td>
<td>128</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>654.roms_s</td>
<td>128</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** AMD EPYC 7713  
- **Max MHz:** 3675  
- **Nominal:** 2000  
- **Enabled:** 128 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 shared / 8 cores  
- **Other:** None  
- **Memory:** 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R)  
- **Storage:** 1 x 960 GB SATA SSD  
- **Other:** None  

### Software

- **OS:** SUSE Linux Enterprise Server 12 SP5 (x86_64)  
- **Kernel:** 4.12.14-120-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
## 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>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<tbody>
<tr>
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<tr>
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<td>628.pop2_s</td>
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<tr>
<td>638.imagick_s</td>
<td>128</td>
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<td>80.2</td>
<td>114</td>
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<td>114</td>
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<tr>
<td>654.roms_s</td>
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<td>48.1</td>
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<td>39.4</td>
<td>400</td>
<td>39.5</td>
<td>39.5</td>
<td>398</td>
</tr>
</tbody>
</table>

### Compiler Notes


### 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 numactl 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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ThinkSystem SR665
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CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Tested by: Lenovo Global Technology

SPECspeed®2017_fp_base = 242
SPECspeed®2017_fp_peak = 250

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 = "0-127"
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/
64/32:"
MALLOCCONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREADLIMIT = "128"

Environment variables set by runcpu during the 603.bwaves_s peak run:
GOMP_CPU_AFFINITY = "0-127"

Environment variables set by runcpu during the 627.cam4_s peak run:
GOMP_CPU_AFFINITY = "0-127"

Environment variables set by runcpu during the 628.pop2_s peak run:
GOMP_CPU_AFFINITY = "0-127"

Environment variables set by runcpu during the 654.roms_s peak run:
GOMP_CPU_AFFINITY = "0-127"

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:

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**General Notes (Continued)**

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 linux-ultl Thu Jul 25 19:28:43 2019

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 7713 64-Core Processor
2 "physical id"s (chips)
128 "processors"
core, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 64
siblings : 64
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60 61 62 63
physical 1: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59 60 61 62 63

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): 128
On-line CPU(s) list: 0-127
Thread(s) per core: 1
Core(s) per socket: 64
Socket(s): 2
NUMA node(s): 2
Vendor ID: AuthenticAMD

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SPECspeed®2017_fp_base = 242
SPECspeed®2017_fp_peak = 250

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

Platform Notes (Continued)

CPU family: 25
Model: 1
Model name: AMD EPYC 7713 64-Core Processor
Stepping: 1
CPU MHz: 2000.000
CPU max MHz: 2000.0000
CPU min MHz: 1500.0000
BogoMIPS: 3992.70
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K
L2 cache: 512K
L3 cache: 32768K
NUMA node0 CPU(s): 0-63
NUMA node1 CPU(s): 64-127
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 nop1 nonstop_tsc cpuid extd_apicid aperfmperf pni pclmulqdq
monitor ssse3 fma cx16 pcid sse4_1 sse4_2 movbe popcnt aes avx fi6c rdrand
lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch osvw
ibs skinit wdt tce topext perfctr_core perfctr_nb bext perfctr_l2 mwAITx cPb
cat_l3 cdp_l3 invpcid_single hw_pstate sme ssbd sev ibrs ibp stibp vmmcall fsqsbse
bm1 avx2 smep bmi2 emms invpcid cqm rdt_a rdseed adx smap clflushopt clwb sha ni
xsaveopt xsavec xgetbv1 xsave csq_llc csq_occup_llc csq_mbb_total csq_mbb_local
ci zero irperf xsaverpr wboinovd arat npt lbrv svm_lock nrip_save tsc_scale
vmcb_clean flushbyasid decodeassists pausefilter pfthreshold v_vmsave_vmload vgif
umip pku ospke vaes vpclmulqdq rpdpd overflow_recov 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 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56
57 58 59 60 61 62 63
node 0 size: 257833 MB
node 0 free: 257124 MB
node 1 cpus: 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88
89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112
113 114 115 116 117 118 119 120 121 122 123 124 125 126 127
node 1 size: 258001 MB
node 1 free: 257711 MB
node distances:
node 0 1
0: 10 32

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SPECspeed®2017_fp_base = 242
SPECspeed®2017_fp_peak = 250

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

Platform Notes (Continued)

From /proc/meminfo
MemTotal: 528214196 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 5
  # This file is deprecated and will be removed in a future service pack or release.
  # Please check /etc/os-release for details about this release.
os-release:
  NAME="SLES"
  VERSION="12-SP5"
  VERSION_ID="12.5"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP5"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp5"

uname -a:
  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
CVE-2018-3639 (Speculative Store Bypass):
  Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):
  Mitigation: usercopy/swapgs barriers and __user pointer sanitation
CVE-2017-5715 (Spectre variant 2):
  Mitigation: Full AMD retpoline, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling):
  No status reported
CVE-2019-11135 (TSX Asynchronous Abort):
  Not affected

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SPECspeed®2017_fp_base = 242
SPECspeed®2017_fp_peak = 250

Platform Notes (Continued)

run-level 3 Jul 25 19:26

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

```
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sdb2      xfs   893G   56G  837G   7% /
```

From /sys/devices/virtual/dmi/id
Vendor:         Lenovo
Product:        ThinkSystem SR665 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.

Memory:
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
```

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Lenovo Global Technology

ThinkSystem SR665
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---

### SPEC CPU®2017 Floating Point Speed Result

**Lenovo Global Technology**

**Test Date:** Mar-2021

**Hardware Availability:** Mar-2021

**Software Availability:** Mar-2021

---

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

---

**SPECspeed®2017_fp_base = 242**

**SPECspeed®2017_fp_peak = 250**

---

**Compiler Version Notes (Continued)**

- **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**

- 603.bwaves_s(base, peak)
- 649.fotonik3d_s(base, peak)
- 654.roms_s(base, peak)

---

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

---

**Software Availability:** Mar-2021

---

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SPECspeed®2017_fp_base = 242
SPECspeed®2017_fp_peak = 250

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
654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-mlivm -Wl,-region-vectorize
-Wl,-mlivm -Wl,-function-specialize
-Wl,-mlivm -Wl,-align-all-nofallback-thru-blocks=6
-Wl,-mlivm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -f1to -fstruct-layout=5
-mlivm -unroll-threshold=50 -mlivm -inline-threshold=1000
-fremap-arrays -mlivm -function-specialize -flv-function-specialization
-mlivm -enable-gvn-hoist -mlivm -global-vectorize-slp=true
-mlivm -enable-lcvm-vrp -mlivm -reduce-array-computations=3 -z muldefs
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc
-flang -flangrti

Fortran benchmarks:
-m64 -mno-adx -mno-sse4a -Wl,-mlivm -Wl,-enable-X86-prefetching

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

**Base Optimization Flags (Continued)**

Fortran benchmarks (continued):
- `-Wl,-mlvl -Wl,-enable-licm-vrp -Wl,-mlvlm -Wl,-region-vectorize`
- `-Wl,-mlvlm -Wl,-function-specialize`
- `-Wl,-mlvlm -Wl,-align-all-nofallthru-blocks=6`
- `-Wl,-mlvlm -Wl,-reduce-array-computations=3 -Hz,1,0x1 -O3`
- `-fvecclib=AMDLIBM -ffast-math -Mrecursive`
- `-mlvlm -fuse-tile-inner-loop -funroll-loops`
- `-mlvlm -extra-vectorizer-passes -mlvlm -lsr-in-nested-loop`
- `-mlvlm -enable-licm-vrp -mlvlm -reduce-array-computations=3`
- `-mlvlm -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,-mlvlm -Wl,-enable-X86-prefetching`
- `-Wl,-mlvlm -Wl,-enable-licm-vrp -Wl,-mlvlm -Wl,-region-vectorize`
- `-Wl,-mlvlm -Wl,-function-specialize`
- `-Wl,-mlvlm -Wl,-align-all-nofallthru-blocks=6`
- `-Wl,-mlvlm -Wl,-reduce-array-computations=3 -O3 -march=znver3`
- `-fvecclib=AMDLIBM -ffast-math -fsto -fstruct-layout=5`
- `-mlvlm -unroll-threshold=50 -mlvlm -inline-threshold=1000`
- `-fremap-arrays -mlvlm -function-specialize -flv-function-specialization`

Benchmarks using Fortran, C, and C++:
- `-m64 -mno-adx -mno-sse4a -std=c++98`
- `-Wl,-mlvlm -Wl,-x86-use-vzeroupper=false`
- `-Wl,-mlvlm -Wl,-region-vectorize -Wl,-mlvlm -Wl,-function-specialize`
- `-Wl,-mlvlm -Wl,-align-all-nofallthru-blocks=6`
- `-Wl,-mlvlm -Wl,-reduce-array-computations=3 -O3 -march=znver3`
- `-fvecclib=AMDLIBM -ffast-math -fsto -fstruct-layout=5`
- `-mlvlm -unroll-threshold=50 -mlvlm -inline-threshold=1000`
- `-fremap-arrays -mlvlm -function-specialize -flv-function-specialization`
- `-mlvlm -extra-vectorizer-passes -mlvlm -convert-pow-exp-to-int=false -Hz,1,0x1 -Mrecursive -mlvlm -fuse-tile-inner-loop -funroll-loops`
- `-mlvlm -lsr-in-nested-loop -z muldefs -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang -lflangrti`
## Lenovo Global Technology

**ThinkSystem SR665**  
2.00 GHz, AMD EPYC 7713

### SPECspeed®2017_fp_base = 242  
SPECspeed®2017_fp_peak = 250

<table>
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<th>9017</th>
<th>Test Date:</th>
<th>Mar-2021</th>
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<td>Lenovo Global Technology</td>
<td>Hardware Availability:</td>
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<td>Tested by:</td>
<td>Lenovo Global Technology</td>
<td>Software Availability:</td>
<td>Mar-2021</td>
</tr>
</tbody>
</table>

### 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
```

**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: `basepeak = yes`
- 638.imagick_s: `basepeak = yes`
- 644.nab_s: `basepeak = yes`

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

Fortran benchmarks:

603.bwaves_s: -m64 -mno-adx -mno-sse4a
-W1,-mlirm -W1,-enable-X86-prefetching
-W1,-mlirm -W1,-enable-licm-vrp
-W1,-mlirm -W1,-function-specialize
-W1,-mlirm -W1,-align-all-nofallthru-blocks=6
-W1,-mlirm -W1,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -Mrecursive
-mlirm -reduce-array-computations=3
-mlirm -global-vectorize-slp=true -mlirm -enable-licm-vrp
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-ljemalloc -lflang

649.fotonik3d_s: basepeak = yes

654.roms_s: Same as 603.bwaves_s

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

627.cam4_s: -m64 -mno-adx -mno-sse4a
-W1,-mlirm -W1,-enable-X86-prefetching
-W1,-mlirm -W1,-enable-licm-vrp
-W1,-mlirm -W1,-function-specialize
-W1,-mlirm -W1,-align-all-nofallthru-blocks=6
-W1,-mlirm -W1,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-fstruct-layout=5 -mlirm -unroll-threshold=50
-fremap-arrays -flv-function-specialization
-mlirm -inline-threshold=1000 -mlirm -enable-gvn-hoist
-mlirm -global-vectorize-slp=true
-mlirm -function-specialize -mlirm -enable-licm-vrp
-mlirm -reduce-array-computations=3 -Mrecursive
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-ljemalloc -lflang

628.pop2_s: Same as 627.cam4_s

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes
Lenovo Global Technology
ThinkSystem SR665
2.00 GHz, AMD EPYC 7713

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SPECspeed®2017_fp_peak = 250

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

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

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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Tested with SPEC CPU®2017 v1.1.5 on 2019-07-25 07:28:43-0400.
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