Lenovo Global Technology
ThinkSystem SR635
2.80 GHz, AMD EPYC 7402P

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

Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>24</td>
<td>159</td>
<td>144</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>24</td>
<td>183</td>
<td>183</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>24</td>
<td>163</td>
<td>163</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>24</td>
<td>113</td>
<td>113</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>24</td>
<td>76.3</td>
<td>76.3</td>
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<tr>
<td>628.pop2_s</td>
<td>24</td>
<td>56.7</td>
<td>56.7</td>
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<tr>
<td>638.imagick_s</td>
<td>24</td>
<td>115</td>
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</tr>
<tr>
<td>644.nab_s</td>
<td>24</td>
<td>144</td>
<td>144</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>24</td>
<td>34.7</td>
<td>34.7</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>24</td>
<td>93.1</td>
<td>93.1</td>
</tr>
</tbody>
</table>

Hardware

CPU Name: AMD EPYC 7402P
Max MHz: 3350
Nominal: 2800
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: 128 MB I+D on chip per chip, 16 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

Software

OS: SUSE Linux Enterprise Server 15 SP1 (x86_64)
Compiler: C/C++: Version 1.3.0 of AOCC
Fortran: Version 4.8.2 for GCC
Parallel: Yes
Firmware: Lenovo BIOS Version CFE103L released Aug-2019
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc: jemalloc memory allocator library version 5.1.0
Power Management: --
Lenovo Global Technology

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SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

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>
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<tr>
<td>603.bwaves_s</td>
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<td>272</td>
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<tr>
<td>619.lbm_s</td>
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<td>113</td>
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<td>75.7</td>
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<td>75.5</td>
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<tr>
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<td>56.7</td>
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<tr>
<td>638.imagick_s</td>
<td>24</td>
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<td>114</td>
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<td>144</td>
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<tr>
<td>649.fotonik3d_s</td>
<td>24</td>
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<td>56.0</td>
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<td>164</td>
<td>55.5</td>
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<tr>
<td>654.roms_s</td>
<td>24</td>
<td>169</td>
<td>93.1</td>
<td>169</td>
<td>93.2</td>
<td>169</td>
<td>93.0</td>
</tr>
</tbody>
</table>

SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

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/

The AOCC Fortran Plugin version 1.3.0 was used to leverage AOCC optimizers with gfortran. It is available here: 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

runspec command invoked through numactl i.e.:
numactl --interleave=all runspec <etc>

Set dirty_ratio=8 to limit dirty cache to 8% of memory
Set swappiness=1 to swap only if necessary
Set zone_reclaim_mode=1 to free local node memory and avoid remote memory sync then drop_caches=3 to reset caches before invoking runcpu

(Continued on next page)
### Lenovo Global Technology

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<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>93.5</th>
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</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak</td>
<td>93.9</td>
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</table>

<table>
<thead>
<tr>
<th>CPU2017 License</th>
<th>9017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor</td>
<td>Lenovo Global Technology</td>
</tr>
<tr>
<td>Tested by</td>
<td>Lenovo Global Technology</td>
</tr>
<tr>
<td>Test Date</td>
<td>Sep-2019</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Aug-2019</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Jun-2019</td>
</tr>
</tbody>
</table>

### Operating System Notes (Continued)

dirty_ratio, swappiness, zone_reclaim_mode and drop_caches were all set using privileged echo (e.g. echo 1 > /proc/sys/vm/swappiness).

Transparent huge pages set to 'always' for this run (OS default)

### General Notes

Environment variables set by runcpu before the start of the run:

- LD_LIBRARY_PATH = "/home/cpu2017-1.0.5-amd-na/amd_speed_aocc130_naples_A_lib/64"
- LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/cpu2017-1.0.5-amd-na/amd_speed_aocc130_naples_A_lib/32"
- OMP_DYNAMIC = "false"
- OMP_PLACES = "cores"
- OMP_PROC_BIND = "close"
- OMP_SCHEDULE = "static"
- OMP_STACKSIZE = "192M"
- OMP_WAIT_POLICY = "active"

Binaries were compiled on a system with 2p AMD EPYC 7601 CPU + 512GB Memory using RHEL 7.6

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.

Yes: The test sponsor attests, as of date of publication, that CVE-2018-3640 (Spectre variant 3a) is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2018-3639 (Spectre variant 4) is mitigated in the system as tested and documented.

jemalloc: configured and built with GCC v4.8.5 in RHEL v7.2 under default conditions.  
https://github.com/jemalloc/jemalloc/releases/download/5.1.0/jemalloc-5.1.0.tar.bz2

### Platform Notes

BIOS settings:
Operating Mode set to Maximum Performance  
SMT Mode set to Disabled  
EfficiencyModeEn set to Auto  
Sysinfo program /home/cpu2017-1.0.5-amd-na/bin/sysinfo  
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9  
running on linux-vapu Mon Sep 23 19:10:40 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

(Continued on next page)
Lenovo Global Technology
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SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

Platform Notes (Continued)

From /proc/cpuinfo
model name: AMD EPYC 7402P 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:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
Address sizes: 43 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: 23
Model: 49
Model name: AMD EPYC 7402P 24-Core Processor
Stepping: 0
CPU MHz: 2800.000
CPU max MHz: 2800.0000
CPU min MHz: 1500.0000
BogoMIPS: 5589.25
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K
L2 cache: 512K
L3 cache: 16384K
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 xtopology nonstop_tsc cpuid extd_apicid aperfmperf pni
pclmulqdq monitor ssse3 fma cx16 sse4_1 sse4_2 movbe popcnt aes xsave avx avx2 f16c
rdrand lahf_lm cmp_legacy svm extapic cr8_legacy abm sse4a misalignsse 3dnowprefetch
osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb perfctr_l2 mwaitx cpb
cat_l3 cdp_l3 hw_pstate ssebd mcr ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep
bmi2 cqm rdt_a rdseed adx smap clflushopt clwb sha_ni xsaveopt xsaves vgetbv1 xsaves
cqm_llc cqm_occupt llc cqm_mbm_total cqm_mbm_local clzero irperf xsaeverptr arat npt
lbv svm_lock npgطة tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
pfthreshold avic v_vmsave_vmload vgff umip rdpid overflow_recov succor smca

(Continued on next page)
**Lenovo Global Technology**

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**SPEC**

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Sep-2019

**Hardware Availability:** Aug-2019

**Software Availability:** Jun-2019

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**Platform Notes (Continued)**

/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: 257759 MB
- node 0 free: 257017 MB
- node distances:
  - node 0: 10

From /proc/meminfo

- MemTotal: 263946092 kB
- HugePages_Total: 0
- Hugepagesize: 2048 kB

From /etc/*release*/ etc/*version*

- os-release:
  - NAME="SLES"
  - VERSION="15-SP1"
  - VERSION_ID="15.1"
  - PRETTY_NAME="SUSE Linux Enterprise Server 15 SP1"
  - ID="sles"
  - ID_LIKE="suse"
  - ANSI_COLOR="0;32"
  - CPE_NAME="cpe:/o:suse:sles:15:sp1"

uname -a:

- x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

- CVE-2017-5754 (Meltdown): Not affected
- CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
- CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retropine, IBPB: conditional, IBRS_FW, STIBP: disabled, RSB filling

run-level 3 Sep 23 19:01

SPEC is set to: /home/cpu2017-1.0.5-amd-na

<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>/dev/sdb2</td>
<td>xfs</td>
<td>893G</td>
<td>106G</td>
<td>787G</td>
<td>12%</td>
<td>/</td>
</tr>
</tbody>
</table>

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SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

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Platform Notes (Continued)

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.
BIOS Lenovo CFE103L 08/19/2019
Memory:
8x Samsung M393A4K40DB2-CWE 32 kB 2 rank 3200
8x Unknown Unknown

(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)
==============================================================================
AOCC.LLVM.1.3.0.B34.2018_10_22 clang version 7.0.0 (CLANG: Jenkins
AOCC_1_3_0_Release-Build#34) (based on LLVM AOCC.LLVM.1.3.0.B34.2018_10_22)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aoccl3.0/AOCC-1.3.0-Compiler/bin

==============================================================================
C++, C, Fortran  607.cactuBSSN_s(base, peak)
==============================================================================
AOCC.LLVM.1.3.0.B34.2018_10_22 clang version 7.0.0 (CLANG: Jenkins
AOCC_1_3_0_Release-Build#34) (based on LLVM AOCC.LLVM.1.3.0.B34.2018_10_22)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aoccl3.0/AOCC-1.3.0-Compiler/bin
AOCC.LLVM.1.3.0.B34.2018_10_22 clang version 7.0.0 (CLANG: Jenkins
AOCC_1_3_0_Release-Build#34) (based on LLVM AOCC.LLVM.1.3.0.B34.2018_10_22)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aoccl3.0/AOCC-1.3.0-Compiler/bin
GNU Fortran (GCC) 4.8.2
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SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

 Compiler Version Notes (Continued)

Fortran

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

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GNU Fortran (GCC) 4.8.2
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Fortran, C

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

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GNU Fortran (GCC) 4.8.2
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For more information about these matters, see the file named COPYING
AOCC.LLVM.1.3.0.B34.2018_10_22 clang version 7.0.0 (CLANG: Jenkins AOCC_1_3_0_Release-Build#34) (based on LLVM AOCC.LLVM.1.3.0.B34.2018_10_22)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /root/work/compilers/aocc1.3.0/AOCC-1.3.0-Compiler/bin

Base Compiler Invocation

C benchmarks:
clang

Fortran benchmarks:
clang gfortran

Benchmarks using both Fortran and C:
clang gfortran

Benchmarks using Fortran, C, and C++:
clang++ clang gfortran
Lenovo Global Technology
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SPECspeed®2017_fp_base = 93.5
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CPU2017 License: 9017
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Hardware Availability: Aug-2019
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Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_CASE_FLAG -fconvert=big-endian -DSPEC_LP64
627.cam4_s: -DSPEC_CASE_FLAG -DSPEC_LP64
628.pop2_s: -DSPEC_CASE_FLAG -fconvert=big-endian -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:
- -flto -Wl,-plugin-opt=-merge-constant
  -Wl,-plugin-opt=-lsr-in-nested-loop
  -Wl,-plugin-opt=-enable-vectorize-compares=false -O3 -ffast-math
  -march=znver1 -mno-avx2 -fstruct-layout=3 -mllvm -unroll-threshold=50
  -fremap-arrays -mllvm -inline-threshold=1000
  -flv-function-specialization -mllvm -enable-gvn-hoist
  -mllvm -function-specialize -z muldefs -DSPEC_OPENMP -fopenmp
  -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread -ldl -ljemalloc
  -lamdlibm

Fortran benchmarks:
- -flto -Wl,-plugin-opt=-merge-constant
  -Wl,-plugin-opt=-lsr-in-nested-loop
  -Wl,-plugin-opt=-enable-vectorize-compares=false -O3 -mavx -madx
  -funroll-loops -ffast-math -z muldefs -fplugin=dragonegg.so
  -fplugin-arg-dragonegg-llvm-option=-merge-constant
  -fplugin-arg-dragonegg-llvm-option=-enable-vectorize-compares=false
  -DSPEC_OPENMP -DUSE_OPENMP -fopenmp -fopenmp=libomp -lomp -lpthread
  -ldl -ljemalloc -lamdlibm -lgfortran

Benchmarks using both Fortran and C:
- -flto -Wl,-plugin-opt=-merge-constant
  -Wl,-plugin-opt=-lsr-in-nested-loop
  -Wl,-plugin-opt=-enable-vectorize-compares=false -O3 -ffast-math
  -march=znver1 -mno-avx2 -fstruct-layout=3 -mllvm -unroll-threshold=50
  -fremap-arrays -mllvm -inline-threshold=1000
  -flv-function-specialization -mllvm -enable-gvn-hoist
  -mllvm -function-specialize -mavx -madx -funroll-loops -z muldefs
  -fplugin=dragonegg.so -fplugin-arg-dragonegg-llvm-option=-merge-constant
  -fplugin-arg-dragonegg-llvm-option=-enable-vectorize-compares=false

(Continued on next page)
### Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
-DSPEC_OPENMP -DUSE_OPENMP -fopenmp -fopenmp=libomp -lomp -lpthread
-ldl -ljemalloc -lamdlibm -lgfortran

Benchmarks using Fortran, C, and C++:
-std=c++98 -flto -Wl,-plugin-opt=-merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop
-Wl,-plugin-opt=-enable-vectorize-compares=false -O3 -ffast-math
-march=znver1 -mno-avx2 -fstruct-layout=3 -mllvm -unroll-threshold=50
-fremap-arrays -mllvm -inline-threshold=1000
-fly-function-specialization -mllvm -enable-gvn-hoist
-mllvm -function-specialize -mllvm -unroll-threshold=100
-finline-aggressive -mllvm -enable-vectorize-compares=false -mavx
-madx -funroll-loops -z muldefs -fplugin=dragonegg.so
-fplugin-arg-dragonegg-llvm-option=-merge-constant
-fplugin-arg-dragonegg-llvm-option=-enable-vectorize-compares=false
-DSPEC_OPENMP -fopenmp -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread
-ldl -ljemalloc -lamdlibm

### Base Other Flags

C benchmarks:
-Wno-return-type

Fortran benchmarks:
-Wno-return-type

Benchmarks using both Fortran and C:
-Wno-return-type

Benchmarks using Fortran, C, and C++:
-Wno-return-type

### Peak Compiler Invocation

C benchmarks:
clang

Fortran benchmarks:
clang gfortran

(Continued on next page)
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SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

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Tested by: Lenovo Global Technology

Test Date: Sep-2019
Hardware Availability: Aug-2019
Software Availability: Jun-2019

Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
clang gfortran

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

Peak Portability Flags
Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
619.lbm_s: -flto -Wl,-plugin-opt=-merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
-fstruct-layout=3 -mllvm -vectorize-memory-aggressively
-mao-avx2 -mllvm -unroll-threshold=100 -fremap-arrays
-mllvm -inline-threshold=1000 -DSPEC_OPENMP -fopenmp
-DSPEC_OPENMP -fopenmp=libomp -lomp -lpthread -ldl
-ljemalloc -lamlidlibm

638.imagick_s: basepeak = yes
644.nab_s: basepeak = yes

Fortran benchmarks:
603.bwaves_s: basepeak = yes

649.fotonik3d_s: -flto -Wl,-plugin-opt=-merge-constant
-Wl,-plugin-opt=-lsr-in-nested-loop -O3 -mavx2 -madx
-funroll-loops -ffast-math -fplugin=dragonegg.so
-fplugin-arg=dragonegg-llvm-option=-merge-constant
-fplugin-arg=dragonegg-llvm-option=-inline-threshold:1000
-DSPEC_OPENMP -DUSE_OPENMP -fopenmp -fopenmp=libomp
-lomp -lpthread -ldl -ljemalloc -lamlidlibm -lgfortran

654.roms_s: Same as 649.fotonik3d_s

Benchmarks using both Fortran and C:

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR635
2.80 GHz, AMD EPYC 7402P

SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Test Date: Sep-2019
Tested by: Lenovo Global Technology
Hardware Availability: Aug-2019
Software Availability: Jun-2019

Peak Optimization Flags (Continued)

621.wrf_s: basepeak = yes

627.cam4_s: -flto -Wl, -plugin-opt=-merge-constant
         -Wl, -plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
         -fstruct-layout=3 -mllvm -vectorize-memory-aggressively
         -mno-avx2 -mlvm -unroll-threshold=100 -fremap-arrays
         -mlvm -inline-threshold=1000 -O3 -mavx2 -madx
         -funroll-loops -ffast-math -fplugin=dragonegg.so
         -fplugin-arg=dragonegg-llvm-option=-merge-constant
         -fplugin-arg=dragonegg-llvm-option=-inline-threshold:1000
         -DSPEC_OPENMP -DUSE_OPENMP -fopenmp -fopenmp=libomp
         -lomp -lpthread -ldl -ljemalloc -lamdlibm -lgfortran

628.pop2_s: Same as 627.cam4_s

Benchmarks using Fortran, C, and C++:
         -std=c++98 -flto -Wl, -plugin-opt=-merge-constant
         -Wl, -plugin-opt=-lsr-in-nested-loop -Ofast -march=znver1
         -fstruct-layout=3 -mllvm -vectorize-memory-aggressively -mno-avx2
         -mlvm -unroll-threshold=100 -fremap-arrays
         -mlvm -inline-threshold=1000 -finline-aggressive -O3 -mavx2 -madx
         -funroll-loops -ffast-math -fplugin=dragonegg.so
         -fplugin-arg=dragonegg-llvm-option=-merge-constant
         -fplugin-arg=dragonegg-llvm-option=-inline-threshold:1000
         -DSPEC_OPENMP -fopenmp -DUSE_OPENMP -fopenmp=libomp -lomp -lpthread -ldl
         -ljemalloc -lamdlibm

Peak Other Flags

C benchmarks:
         -Wno-return-type

Fortran benchmarks:
         -Wno-return-type

Benchmarks using both Fortran and C:
         -Wno-return-type

Benchmarks using Fortran, C, and C++:
         -Wno-return-type
Lenovo Global Technology
ThinkSystem SR635
2.80 GHz, AMD EPYC 7402P

SPECspeed®2017_fp_base = 93.5
SPECspeed®2017_fp_peak = 93.9

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-Rome-C.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/aocc130-flags-revA21-1.xml
http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Rome-C.xml

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU®2017 v1.0.5 on 2019-09-23 07:10:39-0400.