### SPEC CPU®2017 Floating Point Speed Result

**ASUSTeK Computer Inc.**  
ASUS RS500A-E10(KRPA-U16) Server System  
2.80 GHz, AMD EPYC 7282

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.2</td>
<td>67.8</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 9016  
**Test Date:** Mar-2020  
**Test Sponsor:** ASUSTeK Computer Inc.  
**Hardware Availability:** Nov-2019  
**Tested by:** ASUSTeK Computer Inc.  
**Software Availability:** Jun-2019

**Threads**

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>16</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>16</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>32</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>32</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>16</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>16</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>16</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>16</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>16</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>16</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** AMD EPYC 7282  
- **Max MHz:** 3200  
- **Nominal:** 2800  
- **Enabled:** 16 cores, 1 chip, 2 threads/core  
- **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:** 64 MB I+D on chip per chip, 16 MB shared / 4 cores  
- **Other:** None  
- **Memory:** 512 GB (8 x 64 GB 2Rx4 PC4-3200AA-R)  
- **Storage:** 1 x 240 GB SATA SSD  
- **Other:** None

**Software**

- **OS:** SUSE Linux Enterprise Server 15 SP1 (x86_64)  
  Kernel 4.12.14-195-default  
- **Compiler:** C/C++/Fortran: Version 2.0.0 of AOCC  
- **Parallel:** Yes  
- **Firmware:** Version 0501 released Nov-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 v5.1.0  
- **Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage.
ASUSTeK Computer Inc.
ASUS RS500A-E10(KRPA-U16) Server System
2.80 GHz, AMD EPYC 7282

CPU2017 License: 9016
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Results Table

<table>
<thead>
<tr>
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</tr>
</tbody>
</table>

SPECspeed®2017_fp_base = 65.2
SPECspeed®2017_fp_peak = 67.8

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 numactl i.e.:
numactl --interleave=all runcpu <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

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)
## SPEC CPU®2017 Floating Point Speed Result

### ASUSTeK Computer Inc.

**ASUS RS500A-E10(KRPA-U16) Server System**

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**CPU2017 License:** 9016  
**Test Sponsor:** ASUSTeK Computer Inc.  
**Tested by:** ASUSTeK Computer Inc.

**Operating System Notes (Continued)**

OS set to performance mode via cpupower frequency-set -g performance.

### Environment Variables Notes

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOMP_CPU_AFFINITY</td>
<td>&quot;0-31&quot;</td>
</tr>
<tr>
<td>LD_LIBRARY_PATH</td>
<td>&quot;/spec2017c3/amd_speed_aocc200_rome_C_lib/64;/spec2017c3/amd_speed_aocc200_rome_C_lib/32:&quot;</td>
</tr>
<tr>
<td>MALLOC_CONF</td>
<td>&quot;retain:true&quot;</td>
</tr>
<tr>
<td>OMP_DYNAMIC</td>
<td>&quot;false&quot;</td>
</tr>
<tr>
<td>OMP_SCHEDULE</td>
<td>&quot;static&quot;</td>
</tr>
<tr>
<td>OMP_STACKSIZE</td>
<td>&quot;128M&quot;</td>
</tr>
<tr>
<td>OMP_THREAD_LIMIT</td>
<td>&quot;32&quot;</td>
</tr>
</tbody>
</table>

Environment variables set by runcpu during the 603.bwaves_s peak run:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOMP_CPU_AFFINITY</td>
<td>&quot;0-15&quot;</td>
</tr>
</tbody>
</table>

Environment variables set by runcpu during the 607.cactuBSSN_s peak run:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td>GOMP_CPU_AFFINITY</td>
<td>&quot;0-15&quot;</td>
</tr>
</tbody>
</table>

Environment variables set by runcpu during the 619.lbm_s peak run:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOMP_CPU_AFFINITY</td>
<td>&quot;0 16 1 17 2 18 3 19 4 20 5 21 6 22 7 23 8 24 9 25 10 26 11 27 12 28 13 29 14 30 15 31&quot;</td>
</tr>
</tbody>
</table>

Environment variables set by runcpu during the 621.wrf_s peak run:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOMP_CPU_AFFINITY</td>
<td>&quot;0 16 1 17 2 18 3 19 4 20 5 21 6 22 7 23 8 24 9 25 10 26 11 27 12 28 13 29 14 30 15 31&quot;</td>
</tr>
</tbody>
</table>

Environment variables set by runcpu during the 644.nab_s peak run:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOMP_CPU_AFFINITY</td>
<td>&quot;0 16 1 17 2 18 3 19 4 20 5 21 6 22 7 23 8 24 9 25 10 26 11 27 12 28 13 29 14 30 15 31&quot;</td>
</tr>
</tbody>
</table>

Environment variables set by runcpu during the 654.roms_s peak run:

<table>
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<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOMP_CPU_AFFINITY</td>
<td>&quot;0-15&quot;</td>
</tr>
</tbody>
</table>

### General Notes

Binaries were compiled on a system with 2x AMD EPYC 7601 CPU + 512GB Memory using Fedora 26

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)
SPEC CPU®2017 Floating Point Speed Result

ASUSTeK Computer Inc.
ASUS RS500A-E10(KRPA-U16) Server System
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SPECspeed®2017_fp_base = 65.2
SPECspeed®2017_fp_peak = 67.8

CPU2017 License: 9016
Test Date: Mar-2020
Test Sponsor: ASUSTeK Computer Inc.
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Software Availability: Jun-2019

General Notes (Continued)

is mitigated in the system as tested and documented.

ejemalloc: configured and built with GCC v9.1.0 in Ubuntu 19.04 with -O3 -znver2 -flto
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:
Power phase shedding = Disabled
SVM Mode = Disabled
SR-IOV support = Disabled
DRAM Scrub time = Disabled
Determinism Slider = Power
APBDIS = 1

Sysinfo program /spec2017c3/bin/sysinfo
Rev: r6365 of 2019-08-21 295195f888a3d7edble6e46a485a0011
running on linux-wv9n Fri Mar 20 01:24:34 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 7282 16-Core Processor
    1 "physical id"s (chips)
    32 "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 : 16
    siblings : 32
    physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

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): 32
On-line CPU(s) list: 0-31
Thread(s) per core: 2
Core(s) per socket: 16
Socket(s): 1
NUMA node(s): 1

(Continued on next page)
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Platform Notes

Vendor ID: AuthenticAMD
CPU family: 23
Model: 49
Model name: AMD EPYC 7282 16-Core Processor
Stepping: 0
CPU MHz: 2800.000
CPU max MHz: 2800.0000
CPU min MHz: 1500.0000
BogoMIPS: 5656.13
Virtualization: AMD-V
L1d cache: 32K
L1i cache: 32K
L2 cache: 512K
L3 cache: 16384K
NUMA node0 CPU(s): 0-31

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 xtopology nonstop_tsc cpuid extd_apicid aperfmperf pni
pcmiulqsd monitor ssse3 fma cx16 sse4_1 sse4_2 movbe popcnt aes xsave avx f16c
rdrand lahf_lm cmp_legacy sse4a misalignsse 3dnowprefetch
osvw ibs skinit wdt tce topoext perfctr_core perfctr_nb perfctr_l2 mwaitx cpb
cat_l3 cdp_l3 hw_pstate sme ssbd sev ibrs ibpb stibp vmmcall fsgsbase bmi1 avx2 smep
bmi2 cqm rdt_a rdseed adx map clflushopt clwb sha_nr xsaveopt xsaves xsavec
xsavecr cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local clzero irperf xsavaeprtr arat npt
lbrv svm_lock nrip_save tsc_scale vmcb_clean flushbyasid decodeassists pausefilter
ptfthresh avic v_vmsave_vmload vgif umip rdpld overflow_recov succor smca

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 24 25 26 27
28 29 30 31
node 0 size: 515818 MB
node 0 free: 515055 MB
node distances:
node 0:
0: 10

From /proc/meminfo
MemTotal: 528197632 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

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

(Continued on next page)
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Platform Notes (Continued)

```
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:
  Linux linux-wv9n 4.12.14-195-default #1 SMP Tue May 7 10:55:11 UTC 2019 (8fba516)
  x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

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: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Full AMD retpoline, IBPB:
  conditional, IBRS_FW, STIBP: conditional, RSB filling

run-level 3 Mar 19 10:44

SPEC is set to: /spec2017c3
  Filesystem  Type  Size  Used Avail Use% Mounted on
  /dev/sdd4   xfs  199G  18G  182G  9% /

From /sys/devices/virtual/dmi/id
  BIOS: American Megatrends Inc. 0501 11/07/2019
  Vendor: ASUSTeK COMPUTER INC.
  Product: KRPA-U16 Series
  Product Family: Server
  Serial: System Serial Number

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:
  8x Samsung M393A8G40AB2-CWE 64 KB 2 rank 3200
  8x Unknown Unknown
```

(Continued on next page)
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SPECspeed®2017_fp_base = 65.2
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Platform Notes (Continued)
(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.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

C++, C, Fortran

| 607.cactuBSSN_s (base, peak) |

AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
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Fortran

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

AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

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ASUSTeK Computer Inc.

ASUS RS500A-E10(KRPA-U16) Server System
2.80 GHz, AMD EPYC 7282

SPECspeed®2017_fp_base = 65.2
SPECspeed®2017_fp_peak = 67.8

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.

Test Date: Mar-2020
Hardware Availability: Nov-2019

Software Availability: Jun-2019

Compiler Version Notes (Continued)

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

AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/bin

AOCC.LLVM.2.0.0.B191.2019_07_19 clang version 8.0.0 (CLANG: Jenkins
AOCC_2_0_0-Build#191) (based on LLVM AOCC.LLVM.2.0.0.B191.2019_07_19)
Target: x86_64-unknown-linux-gnu
Thread model: posix
InstalledDir: /sppo/dev/compilers/aocc-compiler-2.0.0/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
654.roms_s: -DSPEC_LP64
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Base Optimization Flags

C benchmarks:
- -flto -Wl,-mlllvm -Wl,-function-specialize
- -Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mlllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
- -march=znver2 -fstruct-layout=3 -mlllvm -unroll-threshold=50
- -fremap-arrays -mlllvm -function-specialize -mlllvm -enable-gvn-hoist
- -mlllvm -reduce-array-computations=3 -mlllvm -global-vectorize-slp
- -mlllvm -vector-library=LIBMVEC -mlllvm -inline-threshold=1000
- -flv-function-specialization -z muldefs -DSPEC_OPENMP -fopenmp
- -fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc
- -lflang

Fortran benchmarks:
- -flto -Wl,-mlllvm -Wl,-function-specialize
- -Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mlllvm -Wl,-reduce-array-computations=3 -O3 -march=znver2
- -funroll-loops -Mrecursive -mlllvm -vector-library=LIBMVEC -z muldefs
- -Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp -fopenmp=libomp
- -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc -lflang

Benchmarks using both Fortran and C:
- -flto -Wl,-mlllvm -Wl,-function-specialize
- -Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mlllvm -Wl,-reduce-array-computations=3 -O3 -ffast-math
- -march=znver2 -fstruct-layout=3 -mlllvm -unroll-threshold=50
- -fremap-arrays -mlllvm -function-specialize -mlllvm -enable-gvn-hoist
- -mlllvm -reduce-array-computations=3 -mlllvm -global-vectorize-slp
- -mlllvm -vector-library=LIBMVEC -mlllvm -inline-threshold=1000
- -flv-function-specialization -funroll-loops -Mrecursive -z muldefs
- -Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp -fopenmp=libomp
- -lomp -lpthread -ldl -lmvec -lamdlibm -ljemalloc -lflang

Benchmarks using Fortran, C, and C++:
- -std=c++98 -flto -Wl,-mlllvm -Wl,-function-specialize
- -Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -Wl,-vector-library=LIBMVEC
- -Wl,-mlllvm -Wl,-reduce-array-computations=3
- -Wl,-mlllvm -Wl,-supress-fmas -O3 -ffast-math -march=znver2
- -fstruct-layout=3 -mlllvm -unroll-threshold=50 -fremap-arrays
- -mlllvm -function-specialize -mlllvm -enable-gvn-hoist
- -mlllvm -reduce-array-computations=3 -mlllvm -global-vectorize-slp
- -mlllvm -vector-library=LIBMVEC -mlllvm -inline-threshold=1000
- -flv-function-specialization -mlllvm -loop-unswitch-threshold=200000
- -mlllvm -unroll-threshold=100 -mlllvm -enable-partial-unswitch
- -funroll-loops -Mrecursive -z muldefs -Kieee -fno-finite-math-only
- -DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lpthread -ldl -lmvec
- -lamdlibm -ljemalloc -lflang
ASUSTeK Computer Inc.

ASUS RS500A-E10(KRPA-U16) Server System
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**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`

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**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`

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**Peak Portability Flags**

Same as Base Portability Flags

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**Peak Optimization Flags**

C benchmarks:


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

619.lbm_s (continued):
-mlvm -function-specialize -mlvm -enable-gvn-hoist
-mlvm -unroll-threshold=50 -fremap-arrays
-mlvm -vector-library=LIBMVEC
-mlvm -reduce-array-computations=3
-mlvm -global-vectorize-slp -mlvm -inline-threshold=1000
-flv-function-specialization -DSPEC_OPENMP -fopenmp
-lmvec -lamdlibm -fopenmp=libomp -lomp -lpthread -ldl
-ljemalloc -lflang

638.imagick_s: basepeak = yes

644.nab_s: Same as 619.lbm_s

Fortran benchmarks:

603.bwaves_s: -flto -Wl,-mlvm -Wl,-function-specialize
-Wl,-mlvm -Wl,-region-vectorize
-Wl,-mlvm -Wl,-vector-library=LIBMVEC
-Wl,-mlvm -Wl,-reduce-array-computations=3 -O3
-march=znver2 -funroll-loops -mrecursive
-mlvm -vector-library=LIBMVEC -Kieee
-fno-finite-math-only -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
-ljemalloc -lflang

649.fotonik3d_s: basepeak = yes

654.roms_s: -flto -Wl,-mlvm -Wl,-function-specialize
-Wl,-mlvm -Wl,-region-vectorize
-Wl,-mlvm -Wl,-vector-library=LIBMVEC
-Wl,-mlvm -Wl,-reduce-array-computations=3
-Wl,-mlvm -Wl,-enable-X86-prefetching -O3 -march=znver2
-funroll-loops -mrecursive -mlvm -vector-library=LIBMVEC
-Kieee -fno-finite-math-only -DSPEC_OPENMP -fopenmp
-fopenmp=libomp -lomp -lpthread -ldl -lmvec -lamdlibm
-ljemalloc -lflang

Benchmarks using both Fortran and C:

621.wrf_s: -flto -Wl,-mlvm -Wl,-function-specialize
-Wl,-mlvm -Wl,-region-vectorize
-Wl,-mlvm -Wl,-vector-library=LIBMVEC
-Wl,-mlvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver2 -mno-sse4a -fstruct-layout=5
-mlvm -vectorize-memory-aggressively

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SPEC CPU®2017 Floating Point Speed Result

ASUSTeK Computer Inc.
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Peak Optimization Flags (Continued)

621.wrf_s (continued):
-mlirvm -function-specialize -mlirvm -enable-gvn-hoist
-mlirvm -unroll-threshold=50 -fremap-arrays
-mlirvm -vector-library=LIBMVEC
-mlirvm -reduce-array-computations=3
-mlirvm -global-vectorize-slp -mlirvm -inline-threshold=1000
-llvm-function-specialization -O3 -funroll-loops
-Mrecursive -Klee -fno-finite-math-only -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -lpthread -ldl -lmvec
-lamdlib -ljemalloc -lflang

627.cam4_s basepeak = yes
628.pop2_s basepeak = yes

Benchmarks using Fortran, C, and C++:
-std=c++98 -fllto -Wl,-mlirvm -Wl,-function-specialize
-Wl,-mlirvm -Wl,-region-vectorize -Wl,-mlirvm -Wl,-vector-library=LIBMVEC
-Wl,-mlirvm -Wl,-reduce-array-computations=3 -Ofast -march=znver2
-mno-sse4a -fstruct-layout=5 -mlirvm -vectorize-memory-aggressively
-mlirvm -function-specialize -mlirvm -enable-gvn-hoist
-mlirvm -unroll-threshold=50 -fremap-arrays
-mlirvm -vector-library=LIBMVEC -mlirvm -reduce-array-computations=3
-mlirvm -global-vectorize-slp -mlirvm -inline-threshold=1000
-llvm-function-specialization -mlirvm -unroll-threshold=100
-mlirvm -enable-partial-unswitch -mlirvm -loop-unswitch-threshold=200000
-O3 -funroll-loops -Mrecursive -Klee -fno-finite-math-only
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lpthread -ldl -lmvec
-lamdlib -ljemalloc -lflang

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

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