## SPEC CPU®2017 Integer Speed Result

### Hardware

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed²017_int_base</th>
<th>SPECspeed²017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_s</td>
<td>32</td>
<td>6.99</td>
<td>7.04</td>
</tr>
<tr>
<td>gcc_s</td>
<td>32</td>
<td>13.7</td>
<td>13.7</td>
</tr>
<tr>
<td>mcf_s</td>
<td>32</td>
<td>8.88</td>
<td>21.2</td>
</tr>
<tr>
<td>omnetpp_s</td>
<td>32</td>
<td>14.5</td>
<td>17.4</td>
</tr>
<tr>
<td>xalancbmk_s</td>
<td>32</td>
<td>6.74</td>
<td></td>
</tr>
<tr>
<td>x264_s</td>
<td>32</td>
<td>5.87</td>
<td></td>
</tr>
<tr>
<td>deepsjeng_s</td>
<td>32</td>
<td>23.8</td>
<td></td>
</tr>
<tr>
<td>leela_s</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exchange2_s</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xz_s</td>
<td>32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CPU Name:** AMD EPYC 7543P  
**Max MHz:** 3700  
**Nominal:** 2800  
**Enabled:** 32 cores, 1 chip, 2 threads/core  
**Orderable:** 1 chip  
**Cache L1:** 32 KB I + 32 KB D on chip per core  
**Cache L2:** 512 KB I+D on chip per core  
**Cache L3:** 256 MB I+D on chip per chip, 32 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 SP2 (x86_64)  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Compiler:</td>
<td>C/C++/Fortran: Version 3.0.0 of AOCC</td>
</tr>
<tr>
<td>Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>Firmware:</td>
<td>Version 0401 released Apr-2021</td>
</tr>
<tr>
<td>File System:</td>
<td>xfs</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>64-bit</td>
</tr>
<tr>
<td>Other:</td>
<td>jemalloc: jemalloc memory allocator library v5.1.0</td>
</tr>
<tr>
<td>Power Management:</td>
<td>BIOS and OS set to prefer performance at the cost of additional power usage.</td>
</tr>
</tbody>
</table>
## 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>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>32</td>
<td>254</td>
<td>6.98</td>
<td>254</td>
<td>6.99</td>
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<td>252</td>
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<td>251</td>
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<tr>
<td>602.gcc_s</td>
<td>32</td>
<td><strong>290</strong></td>
<td><strong>13.7</strong></td>
<td>290</td>
<td>13.7</td>
<td>289</td>
<td>13.8</td>
<td>1</td>
<td>290</td>
<td><strong>13.7</strong></td>
<td>290</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>32</td>
<td>222</td>
<td>21.2</td>
<td>223</td>
<td>21.2</td>
<td><strong>222</strong></td>
<td><strong>21.2</strong></td>
<td>32</td>
<td>222</td>
<td>21.2</td>
<td>223</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>32</td>
<td>184</td>
<td><strong>8.88</strong></td>
<td>182</td>
<td>8.94</td>
<td>188</td>
<td>8.70</td>
<td>32</td>
<td>184</td>
<td><strong>8.88</strong></td>
<td>182</td>
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<td>623.xalanchmk_s</td>
<td>32</td>
<td>98.5</td>
<td>14.4</td>
<td>97.1</td>
<td>14.6</td>
<td><strong>97.6</strong></td>
<td><strong>14.5</strong></td>
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<td>98.5</td>
<td>14.4</td>
<td>97.1</td>
</tr>
<tr>
<td>625.x264_s</td>
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<td>101</td>
<td>17.4</td>
<td>102</td>
<td>17.4</td>
<td><strong>101</strong></td>
<td><strong>17.4</strong></td>
<td>32</td>
<td>101</td>
<td>17.4</td>
<td>102</td>
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<td>631.deepsjeng_s</td>
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<td>215</td>
<td>6.67</td>
<td>212</td>
<td>6.75</td>
<td><strong>213</strong></td>
<td><strong>6.74</strong></td>
<td>32</td>
<td>215</td>
<td>6.67</td>
<td>212</td>
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<tr>
<td>641.leela_s</td>
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<td>291</td>
<td>5.87</td>
<td>291</td>
<td>5.87</td>
<td><strong>291</strong></td>
<td><strong>5.87</strong></td>
<td>1</td>
<td>290</td>
<td>5.89</td>
<td><strong>290</strong></td>
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<td>648.exchange2_s</td>
<td>32</td>
<td>124</td>
<td><strong>23.8</strong></td>
<td>124</td>
<td>23.8</td>
<td>124</td>
<td>23.8</td>
<td>32</td>
<td>124</td>
<td><strong>23.8</strong></td>
<td>124</td>
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<tr>
<td>657.xz_s</td>
<td>32</td>
<td>244</td>
<td>25.4</td>
<td>244</td>
<td>25.4</td>
<td>242</td>
<td>25.6</td>
<td>32</td>
<td>242</td>
<td>25.6</td>
<td>244</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 limit
'ulimit -l 2097152' was used to set environment locked pages in memory limit
OS set to performance mode via cpupower frequency-set -g performance
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,
ASUSTeK Computer Inc.
ASUS RS520A-E11(KMPA-U16) Server System
2.80 GHz, AMD EPYC 7543P

SPECspeed®2017_int_base = 12.7
SPECspeed®2017_int_peak = 12.7

Operating System Notes (Continued)

'echo always > /sys/kernel/mm/transparent_hugepage/enabled' and
'echo always > /sys/kernel/mm/transparent_hugepage/defrag' run as root.

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
GOMP_CPU_AFFINITY = "0-63"
LD_LIBRARY_PATH =
"/cpu118/amd_speed_aocc300_milan_B_lib/64;/cpu118/amd_speed_aocc300_milan_B_lib/32:"
MALLOC_CONF = "retain:true"
OMP_DYNAMIC = "false"
OMP_SCHEDULE = "static"
OMP_STACKSIZE = "128M"
OMP_THREAD_LIMIT = "64"

Environment variables set by runcpu during the 600.perlbench_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 602.gcc_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 641.leela_s peak run:
GOMP_CPU_AFFINITY = "0"

Environment variables set by runcpu during the 657.xz_s peak run:
GOMP_CPU_AFFINITY = "0-31"

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
Platform Notes

BIOS Configuration:
- DLWM Support = Disabled
- SVM Mode = Disabled
- NUMA nodes per socket = NPS2
- APBDIS = 1
- Fix SOC P-state = P0
- Engine Boost = Enabled
- IOMMU = Disabled

Sysinfo program /cpu118/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aca6d4
running on localhost Mon Sep 6 19:32:28 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 7543P 32-Core Processor
- 1 "physical id"s (chips)
- 64 "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 : 32
  - 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

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
- On-line CPU(s) list: 0-63
- Core(s) per socket: 32
- Socket(s): 1
- NUMA node(s): 2
- Vendor ID: AuthenticAMD
- CPU family: 25
- Model: 1
- Model name: AMD EPYC 7543P 32-Core Processor
- Stepping: 1
- CPU MHz: 1662.757
- CPU max MHz: 2800.0000
- CPU min MHz: 1500.0000

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

### CPU Information
- **BogoMIPS:** 5589.57
- **Virtualization:** AMD-V
- **L1d cache:** 32K
- **L1i cache:** 32K
- **L2 cache:** 512K
- **L3 cache:** 32768K
- **NUMA node0 CPU(s):** 0-15, 32-47
- **NUMA node1 CPU(s):** 16-31, 48-63
- **Flags:** `fpu vme de pse mce cmov pat pse36 clflush mmx fxsr sse sse2 ht syscall nx mmxext fxsr_opt pdpe1gb rdtsscp 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
ibs skinit wdt tce toppoext perfctr_core perfctr_nb bext perfctr_l1d mwaitx cpb
cat_l3 cdp_l3 invpcid_single hw_pstate sbb mba ibrs ibpb stibp vmmcall fsbgbase
bm1 avx2 smep bmi2 2mrs invpcid cqmd rdtr_a rdseed adx smap clflushopt clwb sha ni
xsaveopt xsaves xgetbv1 xsave cx16 pcid cqm_occup_l1c cqm_mbb_total cqm_mbb_local
czero irperf xsaveerptr wboinvd arat npt ibrv svm_lock nrip_save tsc_scale
vmcb_clean flushbyasid decodeassists pfthreshold v_vmsave_vmload vgif
umip pu ospe vaes vpclmulqdq rdpid overflow_reco v vmsave_vmload vgif
umip pu ospe vaes vpclmulqdq rdpid overflow_reco v vmsave_vmload vgif
umip pu ospe vaes vpclmulqdq rdpid overflow_reco v vmsave_vmload vgif
umip pu ospe vaes vpclmulqdq rdpid overflow_reco v vmsave_vmload vgif
umip pu ospe vaes vpclmulqdq rdpid overflow_reco v vmsave_vmload vgif`

```
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 32 33 34 35 36 37 38 39 40 41 42 43
44 45 46 47
node 0 size: 257850 MB
node 0 free: 257412 MB
node 1 cpus: 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 48 49 50 51 52 53 54 55 56
57 58 59 60 61 62 63
node 1 size: 257991 MB
node 1 free: 257360 MB
node distances:
node 0 1
0: 10 12
1: 12 10
```

```
From /proc/meminfo
MemTotal: 528222656 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
/sys/devices/system/cpu/cpu*/cpufreq/scaling_governor has performance
```
ASUSTeK Computer Inc.
ASUS RS520A-E11(KMPA-U16) Server System
2.80 GHz, AMD EPYC 7543P

SPEC CPU®2017 Integer Speed Result

<table>
<thead>
<tr>
<th>Test Sponsor:</th>
<th>ASUSTeK Computer Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by:</td>
<td>ASUSTeK Computer Inc.</td>
</tr>
</tbody>
</table>

**SPECspeed®2017_int_base = 12.7**
**SPECspeed®2017_int_peak = 12.7**

CPU2017 License: 9016
Test Date: Sep-2021
Hardware Availability: May-2021
Software Availability: Mar-2021

---

Platform Notes (Continued)

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

```
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"
```

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:

<table>
<thead>
<tr>
<th>Vulnerability</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVE-2018-12207 (iTLB Multihit)</td>
<td>Not affected</td>
</tr>
<tr>
<td>CVE-2018-3620 (L1 Terminal Fault)</td>
<td>Not affected</td>
</tr>
<tr>
<td>Microarchitectural Data Sampling:</td>
<td>Not affected</td>
</tr>
<tr>
<td>CVE-2017-5754 (Meltdown):</td>
<td>Not affected</td>
</tr>
<tr>
<td>CVE-2018-3639 (Speculative Store Bypass):</td>
<td>Mitigation: Speculative Store Bypass disabled via prctl and seccomp</td>
</tr>
<tr>
<td>CVE-2017-5753 (Spectre variant 1):</td>
<td>Not affected</td>
</tr>
<tr>
<td>CVE-2017-5715 (Spectre variant 2):</td>
<td>Mitigation: Full AMD retpoline, IBFB: conditional, IBRS_FW, STIBP: always-on, RSB filling</td>
</tr>
<tr>
<td>CVE-2020-0543 (Special Register Buffer Data Sampling):</td>
<td>Not affected</td>
</tr>
<tr>
<td>CVE-2019-11135 (TSX Asynchronous Abort):</td>
<td>Not affected</td>
</tr>
</tbody>
</table>

run-level 3 Sep 6 15:53

SPEC is set to: /cpu118

```
Filesystem  Type     Size  Used Avail Use% Mounted on
/dev/sda4    xfs      199G  27G   173G  14%   /
```

From /sys/devices/virtual/dmi/id
Vendor: ASUSTeK COMPUTER INC.
Product: RS520A-E11-RS24U
Product Family: Server
Serial: 333366669999

Additional information from dmidecode 3.2 follows. WARNING: Use caution when you...
ASUSTeK Computer Inc.
ASUS RS520A-E11(KMPA-U16) Server System
2.80 GHz, AMD EPYC 7543P

SPEC CPU®2017 Integer Speed Result
Copyright 2017-2021 Standard Performance Evaluation Corporation

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

SPECspeed®2017_int_base = 12.7
SPECspeed®2017_int_peak = 12.7

Test Date: Sep-2021
Hardware Availability: May-2021
Software Availability: Mar-2021

Platform Notes (Continued)

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 GB 2 rank 3200
  8x Unknown Unknown

BIOS:
  BIOS Vendor: American Megatrends Inc.
  BIOS Version: 0401
  BIOS Date: 04/14/2021
  BIOS Revision: 4.1

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
| C       | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak) 657.xz_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++     | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak) 641.leela_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 | 648.exchange2_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

(Continued on next page)
## Base Compiler Invocation

- C benchmarks:
  - `clang`

- C++ benchmarks:
  - `clang++`

- Fortran benchmarks:
  - `flang`

## Base Portability Flags

### C benchmarks:
- `-m64`
- `-mno-adx`
- `-mno-sse4a`
- `-Wl,-allow-multiple-definition`
- `-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`
- `-Wl,-fveclib=AMDLIBM`
- `-Wl,-ffast-math`
- `-Wl,-fstruct-layout=5`
- `-Wl,-mllvm -unroll-threshold=50`
- `-Wl,-mllvm -inline-threshold=1000`
- `-Wl,-fremap-arrays`
- `-Wl,-mllvm -function-specialize`
- `-Wl,-fllvm -function-specialization`
- `-Wl,-mllvm -enable-gvn-hoist`
- `-Wl,-mllvm -global-vectorize-slp=true`
- `-Wl,-mllvm -enable-licm-vrp`
- `-Wl,-reduce-array-computations=3`
- `-Wl,-z muldefs`
- `-DSPEC_OPENMP`
- `-fopenmp`
- `-lomp`
- `-lamdlibm`
- `-ljemalloc`

## Base Optimization Flags

- `-m64`
- `-mno-adx`
- `-mno-sse4a`
- `-Wl,-allow-multiple-definition`
- `-Wl,-align-all-nofallthru-blocks=6`
- `-Wl,-mllvm -Wl,-enable-licm-vrp`
- `-Wl,-mllvm -Wl,-region-vectorize`
- `-Wl,-mllvm -Wl,-function-specialize`
- `-Wl,-mllvm -Wl,-reduce-array-computations=3`
- `-Wl,-fveclib=AMDLIBM`
- `-Wl,-ffast-math`
- `-Wl,-fstruct-layout=5`
- `-Wl,-mllvm -unroll-threshold=50`
- `-Wl,-mllvm -inline-threshold=1000`
- `-Wl,-fremap-arrays`
- `-Wl,-mllvm -function-specialize`
- `-Wl,-fllvm -function-specialization`
- `-Wl,-mllvm -enable-gvn-hoist`
- `-Wl,-mllvm -global-vectorize-slp=true`
- `-Wl,-mllvm -enable-licm-vrp`
- `-Wl,-reduce-array-computations=3`
- `-Wl,-z muldefs`
- `-DSPEC_OPENMP`
- `-fopenmp`
- `-lomp`
- `-lamdlibm`
- `-ljemalloc`
## Base Optimization Flags (Continued)

C benchmarks (continued):

```
-lflang -lflangrti
```

C++ benchmarks:

```
-m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mlllvm -Wl,-do-block-reorder=aggressive
-Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -Wl,-function-specialize
-Wl,-mlllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mlllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -mlllvm -enable-partial-unswitch
-mlllvm -unroll-threshold=100 -finline-aggressive
-flv-function-specialization -mlllvm -loop-unswitch-threshold=200000
-mlllvm -reroll-loops -mlllvm -aggressive-loop-unswitch
-mlllvm -extra-vectorizer-passes -mlllvm -reduce-array-computations=3
-mlllvm -global-vectorize-slp=true -mlllvm -convert-pow-exp-to-int=false
-z muldefs -mlllvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ldamdlibm -ljemalloc -lflang
-lflangrti
```

Fortran benchmarks:

```
-m64 -mno-adx -mno-sse4a -Wl,-mlllvm -Wl,-inline-recursion=4
-Wl,-mlllvm -Wl,-lsr-in-nested-loop -Wl,-mlllvm -Wl,-enable-iv-split
-Wl,-mlllvm -Wl,-region-vectorize -Wl,-mlllvm -Wl,-function-specialize
-Wl,-mlllvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mlllvm -Wl,-reduce-array-computations=3 -O3 -march=znver3
-fveclib=AMDLIBM -ffast-math -flto -z muldefs
-mlllvm -unroll-aggressive -mlllvm -unroll-threshold=150 -DSPEC_OPENMP
-fopenmp -fopenmp=libomp -lomp -ldamdlibm -ljemalloc -lflang
-lflangrti
```

### Base Other Flags

C benchmarks:

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

C++ benchmarks:

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

Fortran benchmarks:

```
-Wno-return-type
```
ASUSTeK Computer Inc.  
ASUS RS520A-E11(KMPA-U16) Server System  
2.80 GHz, AMD EPYC 7543P  

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Test Sponsor: ASUSTeK Computer Inc.
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Peak Compiler Invocation

C benchmarks:
clang

C++ benchmarks:
clang++

Fortran benchmarks:
flang

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

600.perlbench_s: -m64 -mno-adx -mno-sse4a -Wl,-allow-multiple-definition  
-Wl,-ml1vm -Wl,-enable-licm-vrp  
-Wl,-ml1vm -Wl,-function-specialize  
-Wl,-ml1vm -Wl,-align-all-nofallthru-blocks=6  
-Wl,-ml1vm -Wl,-reduce-array-computations=3 -Ofast  
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto  
-fstruct-layout=5 -ml1vm -unroll-threshold=50  
-fremap-arrays -flv-function-specialization  
-ml1vm -inline-threshold=1000 -ml1vm -enable-gvn-hoist  
-ml1vm -global-vectorize-slp=true  
-ml1vm -function-specialize -ml1vm -enable-licm-vrp  
-ml1vm -reduce-array-computations=3 -DSPEC_OPENMP -fopenmp  
-fopenmp=libomp -lomp -lamdlibm -ljemalloc -lflang

602.gcc_s: Same as 600.perlbench_s

605.mcf_s: basepeak = yes

625.x264_s: basepeak = yes

657.xz_s: Same as 600.perlbench_s

C++ benchmarks:

(Continued on next page)
ASUSTeK Computer Inc.
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2.80 GHz, AMD EPYC 7543P

SPEC CPU®2017 Integer Speed Result
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2.80 GHz, AMD EPYC 7543P
ASUS RS520A-E11(KMPA-U16) Server System

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

Peak Optimization Flags (Continued)

620.omnetpp_s: basepeak = yes
623.xalancbmk_s: basepeak = yes
631.deepsjeng_s: basepeak = yes

641.leela_s: -m64 -std=c++98 -mno-adx -mno-sse4a
-Wl,-mlcvm -Wl,-do-block-reorder=aggressive
-Wl,-mlcvm -Wl,-function-specialize
-Wl,-mlcvm -Wl,-align-all-nofallthru-blocks=6
-Wl,-mlcvm -Wl,-reduce-array-computations=3 -Ofast
-march=znver3 -fveclib=AMDLIBM -ffast-math -flto
-finline-aggressive -mlcvm -unroll-threshold=100
-flv-function-specialization -mlcvm -enable-lcim-vrp
-mlcvm -reroil-loops -mlcvm -aggressive-loop-unswitch
-mlcvm -reduce-array-computations=3
-mlcvm -global-vectorize-slp=true
-mlcvm -do-block-reorder=aggressive
-fvirtual-function-elimination -fvisibility=hidden
-DSPEC_OPENMP -fopenmp -fopenmp=libomp -lomp -lamdlibm
-ljemalloc -lflang

Fortran benchmarks:
648.exchange2_s: basepeak = yes

Peak Other Flags

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

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

Fortran benchmarks:
-Wno-return-type

The flags files that were used to format this result can be browsed at
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Tested with SPEC CPU®2017 v1.1.8 on 2021-09-06 07:32:27-0400.
Originally published on 2021-09-28.