ASUSTeK Computer Inc.  
ASUS RS700-E10(Z12PP-D32) Server System (2.40 GHz, Intel Xeon Gold 6312U)

**Copyright 2017-2021 Standard Performance Evaluation Corporation**

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>SPECrate®2017_fp_peak</th>
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</thead>
<tbody>
<tr>
<td>191</td>
<td>200</td>
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</tbody>
</table>

**Test Sponsor:** ASUSTeK Computer Inc.  
**Test Date:** Nov-2021  
**Hardware Availability:** May-2021  
**Software Availability:** Mar-2021

### Hardware

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECrate®2017_fp_base</th>
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<tr>
<td>503.bwaves_r</td>
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</tr>
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<td></td>
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</tr>
</tbody>
</table>

### Software

| OS         | Red Hat Enterprise Linux release 8.3 (Ootpa)  
|------------|---------------------------------------------|

| Compiler   | C/C++: Version 2021.1 of Intel oneAPI DPC++/C++ Compiler Build 20201113 for Linux;  
|------------|----------------------------------------------------------------------------------|
|            | Fortran: Version 2021.1 of Intel Fortran Compiler Classic Build 20201112 for Linux;  
|            | C/C++: Version 2021.1 of Intel C/C++ Compiler Classic Build 20201112 for Linux  

| Parallel   | No  
|------------|-----|

| Firmware   | Version 0504 released May-2021  
|------------|--------------------------------|

| System State | Run level 3 (multi-user)  
|--------------|----------------------------|
| Base Pointers | 64-bit  
| Peak Pointers | 64-bit  
| Other | jemalloc memory allocator V5.0.1  

| Power Management | BIOS and OS set to prefer performance at the cost of additional power usage.  

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ASUS RS700-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 191
SPECrate®2017_fp_peak = 200

Results Table

<table>
<thead>
<tr>
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<th>Ratio</th>
<th>Seconds</th>
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<td>96.8</td>
<td>396</td>
<td>96.3</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor.
For details, please see the config file.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"
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:
LD_LIBRARY_PATH = "/home/cpu118/lib/intel64:/home/cpu118/je5.0.1-64"
MALLOC_CONF = "retain:true"

General Notes

Binaries compiled on a system with 1x Intel Core i9–7980XE CPU + 64GB RAM
memory using Red Hat Enterprise Linux 8.1
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

ASUSTeK Computer Inc.
ASUS RS700-E10(Z12PP-D32) Server System
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SPECrate®2017_fp_base = 191
SPECrate®2017_fp_peak = 200

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Test Date: Nov-2021
Tested by: ASUSTeK Computer Inc.
Hardware Availability: May-2021
Software Availability: Mar-2021

General Notes (Continued)

sync; echo 3> /proc/sys/vm/drop_caches
runcpu command invoked through numacll i.e.:
n numacll --interleave=all runcpu <etc>

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, a general purpose malloc implementation
built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

Platform Notes

BIOS Configuration:
VT-d = Disabled
Patrol Scrub = Disabled
SNC = Enable SNC2 (2-clusters)
Engine Boost = Aggressive
SR-IOV Support = Disabled
BMC Configuration:
Fan mode = Full speed mode

Sysinfo program /home/cpu118/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e6ac64d
running on localhost.localdomain Fri Nov 26 10:45:12 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 : Intel(R) Xeon(R) Gold 6312U CPU @ 2.40GHz
  1 "physical id"s (chips)
  48 "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 : 48
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

From lscpu from util-linux 2.32.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit

(Continued on next page)
ASUSTeK Computer Inc.

ASUS RS700-E10(Z12PP-D32) Server System
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SPECrate®2017_fp_base = 191
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CPU2017 License: 9016
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Platform Notes (Continued)

<table>
<thead>
<tr>
<th>Platform Notes</th>
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<tbody>
<tr>
<td>Byte Order: Little Endian</td>
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<tr>
<td>CPU(s): 48</td>
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<tr>
<td>On-line CPU(s) list: 0-47</td>
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<tr>
<td>Thread(s) per core: 2</td>
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<tr>
<td>Core(s) per socket: 24</td>
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<tr>
<td>Socket(s): 1</td>
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<tr>
<td>NUMA node(s): 2</td>
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<tr>
<td>Vendor ID: GenuineIntel</td>
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<td>CPU family: 6</td>
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<tr>
<td>Model name: Intel(R) Xeon(R) Gold 6312U CPU @ 2.40GHz</td>
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<td>Virtualization: VT-x</td>
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<td>L1i cache: 32K</td>
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<tr>
<td>L2 cache: 1280K</td>
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<tr>
<td>L3 cache: 36864K</td>
</tr>
<tr>
<td>NUMA node0 CPU(s): 0-11,24-35</td>
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<tr>
<td>NUMA nodel CPU(s): 12-23,36-47</td>
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<tr>
<td>Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtrr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 invvpcl_single intel_pni ssbd ibrs ibpb stibp ibrs_extended tpr_shadow vmx flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cmqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsaves xsaveopt xsavec xgetbv1 xsaves cmqm _mm_total cmqm _mm_local split_lock_detect wbnoiwvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vfm1 umip pku ospke avx512vbmi2 gfnie vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpoptndq la57 rdpid md_clear pconfig flush_lld arch_capabilities</td>
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<tr>
<td>/proc/cpuinfo cache data</td>
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<tr>
<td>cache size: 36864 KB</td>
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</tbody>
</table>

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 24 25 26 27 28 29 30 31 32 33 34 35
node 0 size: 251587 MB
node 0 free: 256911 MB
SPEC CPU®2017 Floating Point Rate Result

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Platform Notes (Continued)

node 1 cpus: 12 13 14 15 16 17 18 19 20 21 22 23 36 37 38 39 40 41 42 43 44 45 46 47
node 1 size: 251403 MB
node 1 free: 257415 MB
node distances:
node 0 1
0: 10 11
1: 11 10

From /proc/meminfo
MemTotal: 527998384 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

/sbin/tuned-adm active
Current active profile: throughput-performance

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

From /etc/*release* /etc/*version*
NAME="Red Hat Enterprise Linux"
VERSION="8.3 (Ootpa)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.3"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.3 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.3 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.3:ga

uname -a:
Linux localhost.localdomain 4.18.0-240.22.1.el8_3.x86_64 #1 SMP Thu Mar 25 14:36:04 EDT 2021 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

(Continued on next page)
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Platform Notes (Continued)

barriers and __user pointer sanitation
Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling

CVE-2017-5715 (Spectre variant 2):
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Nov 26 10:35

SPEC is set to: /home/cpu118

Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 3.6T 31G 3.6T 1% /home

From /sys/devices/virtual/dmi/id
Vendor: ASUSTeK COMPUTER INC.
Product: RS700-E10-RS12U
Product Family: Server

Additional information from dmidecode 3.2 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:
24x NO DIMM NO DIMM
8x Samsung M393A8G40AB2-CWE 64 GB 2 rank 3200

BIOS:
BIOS Vendor: American Megatrends Inc.
BIOS Version: 0504
BIOS Date: 05/26/2021
BIOS Revision: 5.4

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
C               | 519.lbm_r(base, peak) 538.imagick_r(base, peak)
| 544.nab_r(base, peak)
==============================================================================

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

==============================================================================

(Continued on next page)
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SPECrates®2017 fp_base = 191
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Compiler Version Notes (Continued)

C++ | 508.namd_r(base, peak) 510.parest_r(base, peak)
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

-------------------------------
C++, C | 511.povray_r(peak)
-------------------------------
Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

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C++, C | 511.povray_r(base) 526.blender_r(base, peak)
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
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C++, C | 511.povray_r(peak)
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Intel(R) C++ Intel(R) 64 Compiler Classic for applications running on
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Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
64, Version 2021.1 Build 20201112_000000
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-------------------------------
C++, C | 511.povray_r(base) 526.blender_r(base, peak)
-------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Compiler Version Notes (Continued)

Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

------------------------------------------------------------------------------
C++, C, Fortran | 507.cactuBSSN_r(base, peak)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
Fortran | 503.bwaves_r(base, peak) 549.fotonik3d_r(base, peak)
         554.roms_r(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
Fortran, C | 521.wrf_r(peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R)
64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
Fortran, C | 521.wrf_r(base) 527.cam4_r(base, peak)
------------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on
Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

(Continued on next page)
ASUSTeK Computer Inc.  
ASUS RS700-E10(Z12PP-D32) Server System  
(2.40 GHz, Intel Xeon Gold 6312U)

SPECRate\textsuperscript{\textregistered}2017\textsubscript{fp}_base = 191  
SPECRate\textsuperscript{\textregistered}2017\textsubscript{fp}_peak = 200

CPU2017 License: 9016  
Test Sponsor: ASUSTeK Computer Inc.  
Tested by: ASUSTeK Computer Inc.  
Test Date: Nov-2021  
Hardware Availability: May-2021  
Software Availability: Mar-2021

Compiler Version Notes (Continued)

==============================================================================
Fortran, C  | 521.wrf_r(peak)
-----------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) C Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
-----------------------------------------------------------------------------
==============================================================================
Fortran, C  | 521.wrf_r(base) 527.cam4_r(base, peak)
-----------------------------------------------------------------------------
Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113
Copyright (C) 1985-2020 Intel Corporation. All rights reserved.

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Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
ifort icx

Benchmarks using both C and C++:
icpx icx

Benchmarks using Fortran, C, and C++:
icpx icx ifort
SPEC CPU®2017 Floating Point Rate Result

ASUSTeK Computer Inc.
ASUS RS700-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

Copyright 2017-2021 Standard Performance Evaluation Corporation

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Tested by: ASUSTeK Computer Inc.
Test Date: Nov-2021
Hardware Availability: May-2021
Software Availability: Mar-2021

SPECratr®2017_fp_base = 191
SPECratr®2017_fp_peak = 200

Base Portability Flags

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -funsigned-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ipo -no-prec-div
-qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both Fortran and C:
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-mbranches-within-32B-boundaries -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

ASUSTeK Computer Inc.
ASUS RS700-E10(Z12PP-D32) Server System
(2.40 GHz, Intel Xeon Gold 6312U)

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

SPECratre®2017_fp_base = 191
SPECratre®2017_fp_peak = 200

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

Base Optimization Flags (Continued)

Benchmarks using both C and C++:
-\w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-\flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-mbranches-within-32B-boundaries -ljemalloc
-\L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using Fortran, C, and C++:
-\w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-\flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -O3
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-mbranches-within-32B-boundaries -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Peak Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
521.wrf_r: ifort icc
527.cam4_r: ifort icx

Benchmarks using both C and C++:
511.povray_r: icpc icc
526.blender_r: icpx icx

Benchmarks using Fortran, C, and C++:
icpx icx ifort
ASUSTeK Computer Inc.  
ASUS RS700-E10(Z12PP-D32) Server System  
(2.40 GHz, Intel Xeon Gold 6312U)

SPECrate®2017_fp_base = 191
SPECrate®2017_fp_peak = 200

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

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

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

519.lbm_r: basepeak = yes
538.imagick_r: basepeak = yes
544.nab_r: -w -std=gnu11 -m64 -Wl,-z,muldefs -xcORE-AVX512 -flto
-Ofast -qopt-mem-layout-trans=4 -flto-accuracy-bits=14:sqrt
-mbranches-within-32B-boundaries -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:

508.namd_r: basepeak = yes
510.parest_r: -w -m64 -Wl,-z,muldefs -xcORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves_r: -w -m64 -Wl,-z,muldefs -xcORE-AVX512 -O3 -ipo
-no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs
-align array32byte -auto -mbranches-within-32B-boundaries
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
549.fotonik3d_r: basepeak = yes
554.roms_r: Same as 503.bwaves_r

Benchmarks using both Fortran and C:

521.wrf_r: -prof-gen(pass 1) -prof-use(pass 2) -xcORE-AVX512 -O3
-ipo -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbranches-within-32B-boundaries

(Continued on next page)
ASUSTeK Computer Inc.
ASUS RS700-E10(Z12PP-D32) Server System (2.40 GHz, Intel Xeon Gold 6312U)

CPU2017 License: 9016
Test Sponsor: ASUSTeK Computer Inc.
Test Date: Nov-2021
Tested by: ASUSTeK Computer Inc.

SPECrate®2017_fp_base = 191
SPECrate®2017_fp_peak = 200

Tested with SPEC CPU®2017 v1.1.8 on 2021-11-26 10:45:12-0500.
Originally published on 2021-12-21.

Peak Optimization Flags (Continued)

521.wrf_r (continued):
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

527.cam4_r: basepeak = yes

Benchmarks using both C and C++:

511.povray_r: -prof-gen(pass 1) -prof-use(pass 2) -xCORE-AVX512 -O3
-ipo -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-multiple-gather-scatter-by-shuffles
-qopt-mem-layout-trans=4 -mbbranches-within-32B-boundaries
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z12-V1.2.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z12-V1.2.xml
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml

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