## Lenovo Global Technology

### SPEC CPU®2017 Floating Point Rate Result

**ThinkSystem SN550 V2**  
(3.60 GHz, Intel Xeon Gold 6334)

- **Test Sponsor:** Lenovo Global Technology  
- **Tested by:** Lenovo Global Technology  
- **CPU2017 License:** 9017  
- **Test Date:** Jul-2021  
- **Hardware Availability:** Dec-2020  
- **Software Availability:** Dec-2020

### SPECrate®2017_fp_base = 177  
**SPECrate®2017_fp_peak = Not Run**

### Hardware

- **CPU Name:** Intel Xeon Gold 6334  
- **Max MHz:** 3700  
- **Nominal:** 3600  
- **Enabled:** 16 cores, 2 chips, 2 threads/core  
- **Orderable:** 1,2 chips  
- **Cache L1:** 32 KB I + 48 KB D on chip per core  
- **L2:** 1.25 MB I+D on chip per core  
- **L3:** 18 MB I+D on chip per core  
- **Memory:** 512 GB (16 x 32 GB 2Rx8 PC4-3200AA-R)  
- **Storage:** 1 x 960 GB SATA SSD  
- **Other:** None

### Software

- **OS:** Red Hat Enterprise Linux 8.3  
  (Ootpa)  
  Kernel 4.18.0-240.el8.x86_64
- **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;
- **Firmware:** Lenovo BIOS Version U8E111A 1.02 released May-2021
- **File System:** xfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** Not Applicable
- **Other:** jemalloc memory allocator V5.0.1
- **Power Management:** BIOS and OS set to prefer performance at the cost of additional power usage

### Copies

<table>
<thead>
<tr>
<th>Spec Benchmark</th>
<th>Copies</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>32</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>32</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>32</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>32</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>32</td>
</tr>
<tr>
<td>519.lbm_r</td>
<td>32</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>32</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>32</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>32</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>32</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>32</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>32</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>32</td>
</tr>
</tbody>
</table>

**SPECrate®2017_fp_base (177)**
Lenovo Global Technology
ThinkSystem SN550 V2
(3.60 GHz, Intel Xeon Gold 6334)

CPU2017 License: 9017  Test Date:  Jul-2021
Test Sponsor: Lenovo Global Technology  Hardware Availability: Jul-2021
Tested by: Lenovo Global Technology  Software Availability: Dec-2020

### Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>503.bwaves_r</td>
<td>32</td>
<td>683</td>
<td>470</td>
<td>683</td>
<td>470</td>
<td>32</td>
<td>683</td>
<td>470</td>
<td>683</td>
<td>470</td>
</tr>
<tr>
<td>507.cactuBSSN_r</td>
<td>32</td>
<td>186</td>
<td>217</td>
<td>188</td>
<td>216</td>
<td>32</td>
<td>188</td>
<td>216</td>
<td>188</td>
<td>216</td>
</tr>
<tr>
<td>508.namd_r</td>
<td>32</td>
<td>282</td>
<td>108</td>
<td>282</td>
<td>108</td>
<td>32</td>
<td>282</td>
<td>108</td>
<td>282</td>
<td>108</td>
</tr>
<tr>
<td>510.parest_r</td>
<td>32</td>
<td>791</td>
<td>106</td>
<td>790</td>
<td>106</td>
<td>32</td>
<td>789</td>
<td>106</td>
<td>789</td>
<td>106</td>
</tr>
<tr>
<td>511.povray_r</td>
<td>32</td>
<td>462</td>
<td>162</td>
<td>459</td>
<td>163</td>
<td>32</td>
<td>459</td>
<td>163</td>
<td>459</td>
<td>163</td>
</tr>
<tr>
<td>519.llvmm_r</td>
<td>32</td>
<td>203</td>
<td>166</td>
<td>204</td>
<td>166</td>
<td>32</td>
<td>203</td>
<td>166</td>
<td>203</td>
<td>166</td>
</tr>
<tr>
<td>521.wrf_r</td>
<td>32</td>
<td>431</td>
<td>166</td>
<td>428</td>
<td>167</td>
<td>32</td>
<td>434</td>
<td>165</td>
<td>434</td>
<td>165</td>
</tr>
<tr>
<td>526.blender_r</td>
<td>32</td>
<td>327</td>
<td>149</td>
<td>327</td>
<td>149</td>
<td>32</td>
<td>328</td>
<td>149</td>
<td>328</td>
<td>149</td>
</tr>
<tr>
<td>527.cam4_r</td>
<td>32</td>
<td>352</td>
<td>159</td>
<td>348</td>
<td>161</td>
<td>32</td>
<td>351</td>
<td>159</td>
<td>351</td>
<td>159</td>
</tr>
<tr>
<td>538.imagick_r</td>
<td>32</td>
<td>208</td>
<td>383</td>
<td>207</td>
<td>384</td>
<td>32</td>
<td>208</td>
<td>382</td>
<td>208</td>
<td>382</td>
</tr>
<tr>
<td>544.nab_r</td>
<td>32</td>
<td>215</td>
<td>250</td>
<td>215</td>
<td>250</td>
<td>32</td>
<td>216</td>
<td>249</td>
<td>216</td>
<td>249</td>
</tr>
<tr>
<td>549.fotonik3d_r</td>
<td>32</td>
<td>802</td>
<td>155</td>
<td>804</td>
<td>155</td>
<td>32</td>
<td>802</td>
<td>155</td>
<td>802</td>
<td>155</td>
</tr>
<tr>
<td>554.roms_r</td>
<td>32</td>
<td>578</td>
<td>88.0</td>
<td>578</td>
<td>88.0</td>
<td>32</td>
<td>577</td>
<td>88.1</td>
<td>577</td>
<td>88.1</td>
</tr>
</tbody>
</table>

**SPECrate®2017_fp_base =** 177
**SPECrate®2017_fp_peak =** Not Run

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"

### Environment Variables Notes

Environment variables set by runcpu before the start of the run:
```
LD_LIBRARY_PATH = 
"/home/cpu2017-1.1.8-ic2021.1-revB/lib/intel64:/home/cpu2017-1.1.8-ic202 "
1.1-revB/je5.0.1-64"

```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
```
Lenovo Global Technology
ThinkSystem SN550 V2
(3.60 GHz, Intel Xeon Gold 6334)

SPECrater®2017_fp_base = 177
SPECrater®2017_fp_peak = Not Run

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

General Notes (Continued)

Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3> /proc/sys/vm/drop_caches
runcpu command invoked through numaclt l i.e.:
numactl --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.

Platform Notes

BIOS configuration:
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode
MONITOR/MWAIT set to Enabled
CPU P-state Control set to Legacy
Cl Enhanced Mode set to Enabled
Intel Virtualization Technology set to Disabled
SNC set to Enabled
XPT Prefetcher set to Disabled
UPI Prefetcher set to Disabled

Sysinfo program /home/cpu2017-1.1.8-ic2021.1-revB/bin/sysinfo
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d
running on localhost.localdomain Fri Jul  2 05:08:42 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 6334 CPU @ 3.60GHz
  2 "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 : 8
  siblings : 16
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7

(Continued on next page)
Platform Notes (Continued)

From lscpu from util-linux 2.32.1:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 32
On-line CPU(s) list: 0-31
Thread(s) per core: 2
Core(s) per socket: 8
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 106
Model name: Intel(R) Xeon(R) Gold 6334 CPU @ 3.60GHz
Stepping: 6
CPU MHz: 3700.000
CPU max MHz: 3601.0000
CPU min MHz: 800.0000
BogoMIPS: 7200.00
Virtualization: VT-x
L1d cache: 48K
L1i cache: 32K
L2 cache: 1280K
L3 cache: 18432K
NUMA node0 CPU(s): 0-3, 16-19
NUMA node1 CPU(s): 4-7, 20-23
NUMA node2 CPU(s): 8-11, 24-27
NUMA node3 CPU(s): 12-15, 28-31
Flags: fpu vme de pse tsc msr pae mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art 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 xptr pdcm pclid 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 invpcid_single intel_pni ssbd mba ibrs ibpb ibrs_enabled fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid cqm rdt_a avx512if vavx512dq rdseed adx smap avx512ifm fma clflushopt clwb intel_pt avx512cd sha_huge_table_keys avx512fte pdcm dca pdcm dtlb_dtlb pdcm_tsa pdcm_aon lulesb

From numactl --hardware
cache size : 18432 KB

Warning: a numactl 'node' might or might not correspond to a physical chip.
Lenovo Global Technology
ThinkSystem SN550 V2
(3.60 GHz, Intel Xeon Gold 6334)

SPECrate®2017_fp_base = 177
SPECrate®2017_fp_peak = Not Run

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

Platform Notes (Continued)

available: 4 nodes (0-3)
node 0 cpus: 0 1 2 3 16 17 18 19
node 0 size: 127480 MB
node 0 free: 127953 MB
node 1 cpus: 4 5 6 7 20 21 22 23
node 1 size: 128043 MB
node 1 free: 128532 MB
node 2 cpus: 8 9 10 11 24 25 26 27
node 2 size: 128117 MB
node 2 free: 128488 MB
node 3 cpus: 12 13 14 15 28 29 30 31
node 3 size: 128123 MB
node 3 free: 128572 MB
node distances:
    node   0   1   2   3
    0:  10  11  20  20
    1:  11  10  20  20
    2:  20  20  10  11
    3:  20  20  11  10

From /proc/meminfo
MemTotal: 527881808 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*
os-release:
    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.el8.x86_64 #1 SMP Wed Sep 23 05:13:10 EDT 2020

(Continued on next page)
Lenovo Global Technology
ThinkSystem SN550 V2
(3.60 GHz, Intel Xeon Gold 6334)

SPECrate®2017_fp_base = 177
SPECrate®2017_fp_peak = Not Run

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

Platform Notes (Continued)

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/swaps barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Jul 1 22:31

SPEC is set to: /home/cpu2017-1.1.8-ic2021.1-revB
Filesistem Type Size Used Avail Use% Mounted on
/dev/sda4 xfs 818G 110G 708G 14% /home

From /sys/devices/virtual/dmi/id
Vendor: Lenovo
Product: ThinkSystem SN550 V2
Product Family: ThinkSystem
Serial: 1234567890

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:
16x Samsung M393A4G43AB3-CWE 32 GB 2 rank 3200

BIOS:
BIOS Vendor: Lenovo
BIOS Version: U8E111A-1.02
BIOS Date: 05/07/2021
BIOS Revision: 1.2
Firmware Revision: 1.40

(End of data from sysinfo program)
## Lenovo Global Technology

**ThinkSystem SN550 V2**

(3.60 GHz, Intel Xeon Gold 6334)

<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>
</tbody>
</table>

---

### Compiler Version Notes

<table>
<thead>
<tr>
<th>C</th>
<th>519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C++</th>
<th>508.namd_r(base) 510.parest_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C++, C</th>
<th>511.povray_r(base) 526.blender_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
<td></td>
</tr>
<tr>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C++, C, Fortran</th>
<th>507.cactuBSSN_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2021.1 Build 20201113</td>
<td></td>
</tr>
<tr>
<td>Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fortran</th>
<th>503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel(R) Fortran Intel(R) 64 Compiler Classic for applications running on Intel(R) 64, Version 2021.1 Build 20201112_000000</td>
<td></td>
</tr>
<tr>
<td>Copyright (C) 1985-2020 Intel Corporation. All rights reserved.</td>
<td></td>
</tr>
</tbody>
</table>

(Continued on next page)
Lenovo Global Technology
ThinkSystem SN550 V2
(3.60 GHz, Intel Xeon Gold 6334)

<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>
</tbody>
</table>

SPECrater®2017_fp_base = 177
SPECrater®2017_fp_peak = Not Run

Test Date: Jul-2021
Hardware Availability: Jul-2021
Software Availability: Dec-2020

Compiler Version Notes (Continued)

==============================================================================
Fortran, C      | 521.wrf_r(base) 527.cam4_r(base)
==============================================================================
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.

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 icfot

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 -funsinged-char

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

ThinkSystem SN550 V2
(3.60 GHz, Intel Xeon Gold 6334)

<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>
</tbody>
</table>

**SPECrate®2017_fp_base = 177**

**SPECrate®2017_fp_peak = Not Run**

**Base Portability Flags (Continued)**

- `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`

**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`

(Continued on next page)
Lenovo Global Technology
ThinkSystem SN550 V2
(3.60 GHz, Intel Xeon Gold 6334)

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

SPECratenpoz2017 fp_base = 177
SPECratenpoz2017 fp_peak = Not Run

Test Date: Jul-2021
Hardware Availability: Jul-2021
Software Availability: Dec-2020

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):
- -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

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-ICElake-E.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-ICElake-E.xml
http://www.spec.org/cpu2017/flags/Intel-ic2021-official-linux64_revA.xml

SPEC CPU and SPECratenpoz are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU®2017 v1.1.8 on 2021-07-01 17:08:41-0400.
Originally published on 2021-07-20.