Lenovo Global Technology
(Test Sponsor: Lenovo Global Technology)
ThinkSystem SR630 V3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECspeed®2017_fp_base = 345
SPECspeed®2017_fp_peak = 345

CPU2017 License: 9017
Test Date: Dec-2022
Test Sponsor: Lenovo Global Technology
Hardware Availability: Feb-2023
Tested by: Lenovo Global Technology
Software Availability: Jun-2022

<table>
<thead>
<tr>
<th>Threads</th>
<th>603.bwaves_s 120</th>
<th>607.cactuBSSN_s 120</th>
<th>619.lbm_s 120</th>
<th>621.wrf_s 120</th>
<th>627.cam4_s 120</th>
<th>628.pop2_s 120</th>
<th>638.imagick_s 120</th>
<th>644.nab_s 120</th>
<th>649.fotonik3d_s 120</th>
<th>654.roms_s 120</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>425</td>
<td>281</td>
<td>198</td>
<td>205</td>
<td>95.1</td>
<td>740</td>
<td>790</td>
<td></td>
<td>167</td>
<td>480</td>
</tr>
</tbody>
</table>

SPECspeed®2017_fp_base (345) ----- SPECspeed®2017_fp_peak (345)

**Software**

OS: SUSE Linux Enterprise Server 15 SP4 (x86_64)
Kernel 5.14.21-150400.22-default

Compiler:
C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;

Parallel: Yes
Firmware: Lenovo BIOS Version ESE109C 0.79 released Nov-2022

File System: xfs

**Hardware**

CPU Name: Intel Xeon Platinum 8490H
Max MHz: 3500
Nominal: 1900
Enabled: 120 cores, 2 chips
Orderable: 1.2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 112.5 MB I+D on chip per chip
Other: None
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)
Storage: 1 x 960 GB SATA SSD
Other: None

Power Management: BIOS and OS set to prefer performance at the cost of additional power usage
**Lenovo Global Technology**  
(Test Sponsor: Lenovo Global Technology)  
ThinkSystem SR630 V3  
(1.90 GHz, Intel Xeon Platinum 8490H)  

SPEC CPU®2017 Floating Point Speed Result  
Copyright 2017-2023 Standard Performance Evaluation Corporation

<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>
</tr>
</thead>
<tbody>
<tr>
<td>603.bwaves_s</td>
<td>120</td>
<td>53.5</td>
<td>1100</td>
<td>53.9</td>
<td>1090</td>
<td>53.9</td>
<td>1090</td>
<td>120</td>
<td>53.5</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>120</td>
<td>40.0</td>
<td>417</td>
<td>39.2</td>
<td>425</td>
<td>39.0</td>
<td>427</td>
<td>120</td>
<td>40.0</td>
</tr>
<tr>
<td>619.lbm_s</td>
<td>120</td>
<td>18.8</td>
<td>278</td>
<td>18.6</td>
<td>282</td>
<td>18.6</td>
<td>281</td>
<td>120</td>
<td>18.8</td>
</tr>
<tr>
<td>621.wrf_s</td>
<td>120</td>
<td>66.6</td>
<td>199</td>
<td>66.9</td>
<td>198</td>
<td>67.1</td>
<td>197</td>
<td>120</td>
<td>66.6</td>
</tr>
<tr>
<td>627.cam4_s</td>
<td>120</td>
<td>43.4</td>
<td>204</td>
<td>43.1</td>
<td>205</td>
<td>43.2</td>
<td>205</td>
<td>120</td>
<td>43.4</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>120</td>
<td>125</td>
<td>95.1</td>
<td>125</td>
<td>94.7</td>
<td>125</td>
<td>95.1</td>
<td>120</td>
<td>125</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>120</td>
<td>19.5</td>
<td>738</td>
<td>19.3</td>
<td>747</td>
<td>19.5</td>
<td>740</td>
<td>120</td>
<td>19.5</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>120</td>
<td>22.1</td>
<td>790</td>
<td>22.1</td>
<td>791</td>
<td>22.1</td>
<td>790</td>
<td>120</td>
<td>22.1</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>120</td>
<td>54.6</td>
<td>167</td>
<td>54.6</td>
<td>167</td>
<td>54.6</td>
<td>167</td>
<td>120</td>
<td>54.6</td>
</tr>
<tr>
<td>654.roms_s</td>
<td>120</td>
<td>32.5</td>
<td>485</td>
<td>32.8</td>
<td>480</td>
<td>32.8</td>
<td>480</td>
<td>120</td>
<td>32.5</td>
</tr>
</tbody>
</table>

SPECspeed®2017_fp_base = 345  
SPECspeed®2017_fp_peak = 345

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:

KMP_AFFINITY = "granularity=fine,compact"
LD_LIBRARY_PATH = 
"/home/cpu2017-1.1.8-ic2022.1/lib/intel64:/home/cpu2017-1.1.8-ic2022.1/jce5.0.1-64"
MALLOCONF = "retain: true"
OMP_STACKSIZE = "192M"

**General Notes**

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Red Hat Enterprise Linux 8.4
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:

 sync; echo 3>/proc/sys/vm/drop_caches

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

**Lenovo Global Technology**  
(Test Sponsor: Lenovo Global Technology)  
ThinkSystem SR630 V3  
(1.90 GHz, Intel Xeon Platinum 8490H)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>345</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed®2017_fp_peak</td>
<td>345</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 9017  
**Test Date:** Dec-2022  
**Test Sponsor:** Lenovo Global Technology  
**Hardware Availability:** Feb-2023  
**Tested by:** Lenovo Global Technology  
**Software Availability:** Jun-2022

### General Notes (Continued)

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:**  
Choose Operating Mode set to Maximum Performance and then set it to Custom Mode  
Hyper-Threading set to Disabled  
C-state set to Legacy

Sysinfo program /home/cpu2017-1.1.8-ic2022.1/bin/sysinfo  
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16aca64d  
running on test1 Sat Dec 3 10:25:38 2022

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) Platinum 8490H  
2 "physical id"s (chips)  
120 "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 : 60  
siblings : 60  
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 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59  
physical 1: 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 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59

From lscpu from util-linux 2.37.2:  
Architecture: x86_64  
CPU op-mode(s): 32-bit, 64-bit  
Address sizes: 46 bits physical, 57 bits virtual  
Byte Order: Little Endian  
CPU(s): 120

(Continued on next page)
Lenovo Global Technology
(Test Sponsor: Lenovo Global Technology)
ThinkSystem SR630 V3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECspeed®2017_fp_base = 345
SPECspeed®2017_fp_peak = 345

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

Platform Notes (Continued)

On-line CPU(s) list: 0–119
Vendor ID: GenuineIntel
Model name: Intel(R) Xeon(R) Platinum 8490H
CPU family: 6
Model: 143
Thread(s) per core: 1
Core(s) per socket: 60
Socket(s): 2
Stepping: 6
BogoMIPS: 3800.00
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr
pgs 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
onstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx
smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt
tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault
ebp cat_l3 cat_l2 cdp_l3 invpcid_single intel_pinn cd_pdp_12 ssbd mba ibrs ibp stibp
ibrsenhanced tpr_shadow vmmflexpriori ept vpid ept_ad fsgrtd bsc_adjust bmit
hle avx2 smep bmi2 erms invpcid rtm cmqm rdt_a avx512v f avx512dq rdseed adx smap
avx512idfma clflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl xsaveopt
xsavec xgetbv1 xsave cqm_llc cqm_occup_lllc cqm_cmbm_total cqm_cmbm_local
split_lock_detect avx_vnni avx512_bf16 wmbninvvd dtherm ida arat pln pts avx512vbmi
umip pku ospke waitpkg avx512_vbmi2 gfen vaes vpclmulqdq avx512_vnni avx512_bitalg
tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b enqcmd
fsrm md_clear serialize txsldtrk pconf r arch_lbr avx512_fp16 amx_tile flush_lld
arch_capabilities

Virtualization: VT-x
L1d cache: 5.6 MiB (120 instances)
L1i cache: 3.8 MiB (120 instances)
L2 cache: 240 MiB (120 instances)
L3 cache: 225 MiB (2 instances)
NUMA node(s): 2
NUMA node0 CPU(s): 0–59
NUMA node1 CPU(s): 60–119
Vulnerability Itlb multihit: Not affected
Vulnerability L1f: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via
prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user
pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB
filling
Vulnerability Srbds: Not affected
Vulnerability Txs async abort: Not affected

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

Lenovo Global Technology
(Test Sponsor: Lenovo Global Technology)
ThinkSystem SR630 V3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECspeed®2017_fp_base = 345
SPECspeed®2017_fp_peak = 345

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

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Jun-2022

Platform Notes (Continued)

From lscpu --cache:

<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1d</td>
<td>48K</td>
<td>5.6M</td>
<td>12</td>
<td>Data</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L1i</td>
<td>32K</td>
<td>3.8M</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L2</td>
<td>2M</td>
<td>240M</td>
<td>16</td>
<td>Unified</td>
<td>2</td>
<td>2048</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L3</td>
<td>112.5M</td>
<td>225M</td>
<td>15</td>
<td>Unified</td>
<td>3</td>
<td>122880</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

From /proc/cpuinfo cache data

```
cache size : 115200 KB
```

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 16 17 18 19 20 21 22 23 24 25 26 27
28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56
57 58 59
node 0 size: 257696 MB
node 0 free: 256921 MB
node 1 cpus: 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84
85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109
110 111 112 113 114 115 116 117 118 119
node 1 size: 257969 MB
node 1 free: 257027 MB
node distances:
node 0: 10 21
node 1: 21 10
```

From /proc/meminfo

```
MemTotal:      528042376 kB
HugePages_Total:       0
Hugepagesize:    2048 kB
```

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

```
NAME="SLES"
VERSION="15-SP4"
VERSION_ID="15.4"
PRETTY_NAME="SUSE Linux Enterprise Server 15 SP4"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15:sp4"
```

```
uname -a:
Linux test1 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18 UTC 2022 (49db222) x86_64 x86_64 x86_64 GNU/Linux
```

(Continued on next page)
SPEC CPU®2017 Floating Point Speed Result
Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology
(Test Sponsor: Lenovo Global Technology)
ThinkSystem SR630 V3
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECspeed®2017_fp_base = 345
SPECspeed®2017_fp_peak = 345

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

Test Date: Dec-2022
Hardware Availability: Feb-2023
Software Availability: Jun-2022

Platform Notes (Continued)

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): Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2018-3639 (Speculative Store Bypass): Mitigation: usercopy/swapgs barriers and __user pointer sanitization
CVE-2017-5753 (Spectre variant 1): Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
CVE-2017-5715 (Spectre variant 2): Not affected
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Dec 3 10:20

SPEC is set to: /home/cpu2017-1.1.8-ic2022.1

From /sys/devices/virtual/dmi/id
Vendor: Lenovo
Product: ThinkSystem SR630 V3
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 Hynix HMCG88AEBRA168N 32 GB 2 rank 4800

BIOS:
BIOS Vendor: Lenovo
BIOS Version: ESE109C-0.79
BIOS Date: 11/22/2022
BIOS Revision: 0.79
Firmware Revision: 0.72

(End of data from sysinfo program)
## SPEC CPU®2017 Floating Point Speed Result

**Lenovo Global Technology**  
(Test Sponsor: Lenovo Global Technology)  
ThinkSystem SR630 V3  
(1.90 GHz, Intel Xeon Platinum 8490H)  

<table>
<thead>
<tr>
<th>CPU2017 License:</th>
<th>Lenovo Global Technology</th>
<th>Test Date:</th>
<th>Dec-2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor:</td>
<td>Lenovo Global Technology</td>
<td>Hardware Availability:</td>
<td>Feb-2023</td>
</tr>
<tr>
<td>Tested by:</td>
<td>Lenovo Global Technology</td>
<td>Software Availability:</td>
<td>Jun-2022</td>
</tr>
</tbody>
</table>

**SPECspeed®2017_fp_base = 345**  
**SPECspeed®2017_fp_peak = 345**

### Compiler Version Notes

<table>
<thead>
<tr>
<th>C</th>
<th>619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base, peak)</th>
</tr>
</thead>
</table>
|                 | Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316  
|                 | Copyright (C) 1985-2022 Intel Corporation. All rights reserved. |

<table>
<thead>
<tr>
<th>C++, C, Fortran</th>
<th>607.cactuBSSN_s(base, peak)</th>
</tr>
</thead>
</table>
|                 | Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316  
|                 | Copyright (C) 1985-2022 Intel Corporation. All rights reserved. |

<table>
<thead>
<tr>
<th>Fortran</th>
<th>603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(base, peak)</th>
</tr>
</thead>
</table>
|                 | Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316  
|                 | Copyright (C) 1985-2022 Intel Corporation. All rights reserved. |

<table>
<thead>
<tr>
<th>Fortran, C</th>
<th>621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)</th>
</tr>
</thead>
</table>
|                 | Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316  
|                 | Copyright (C) 1985-2022 Intel Corporation. All rights reserved. |
Lenovo Global Technology  
[Test Sponsor: Lenovo Global Technology]  
ThinkSystem SR630 V3  
(1.90 GHz, Intel Xeon Platinum 8490H)  

**SPEC Speed®2017_fp_base = 345**  
**SPEC Speed®2017_fp_peak = 345**

<table>
<thead>
<tr>
<th>CPU2017 License: 9017</th>
<th>Test Date: Dec-2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Sponsor: Lenovo Global Technology</td>
<td>Hardware Availability: Feb-2023</td>
</tr>
<tr>
<td>Tested by: Lenovo Global Technology</td>
<td>Software Availability: Jun-2022</td>
</tr>
</tbody>
</table>

**Base Compiler Invocation**

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

**Base Portability Flags**

```
603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.itbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
   -assume byteorder
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:
   -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
   -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fopenmp
   -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:
   -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -Ofast -ffast-math
   -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fopenmp
   -nostandard-realloc-lhs -align array32byte -auto
   -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Benchmarks using both Fortran and C:
   -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
   -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fopenmp
```

(Continued on next page)
### Lenovo Global Technology
(Test Sponsor: Lenovo Global Technology)
ThinkSystem SR630 V3
(1.90 GHz, Intel Xeon Platinum 8490H)

<table>
<thead>
<tr>
<th>SPECspeed®2017_fp_base</th>
<th>SPECspeed®2017_fp_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>345</td>
<td>345</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU2017 License</th>
<th>Test Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>9017</td>
<td>Dec-2022</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Sponsor</th>
<th>Tested by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenovo Global Technology</td>
<td>Lenovo Global Technology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Date</th>
<th>Hardware Availability</th>
<th>Software Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec-2022</td>
<td>Feb-2023</td>
<td>Jun-2022</td>
</tr>
</tbody>
</table>

### Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

```
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:

```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

### Peak Compiler Invocation

**C benchmarks:**

```
icx
```

**Fortran benchmarks:**

```
ifx
```

Benchmarks using both Fortran and C:

```
ifx icx
```

Benchmarks using Fortran, C, and C++:

```
icpx icx ifx
```

### Peak Portability Flags

Same as Base Portability Flags

### Peak Optimization Flags

**C benchmarks:**

- `619.lbm_s`: `basepeak = yes`
- `638.imagick_s`: `basepeak = yes`
- `644.nab_s`: `basepeak = yes`

**Fortran benchmarks:**

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


649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

627.cam4_s: basepeak = yes

628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: basepeak = yes

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-Eaglestream-N.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-Eaglestream-N.xml


SPEC CPU and SPECspeed 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 2022-12-02 21:25:37-0500.
Report generated on 2023-01-10 18:59:29 by CPU2017 PDF formatter v6442.
Originally published on 2023-01-10.