# SPEC® CPU2017 Integer Speed Result

## Lenovo Global Technology

**ThinkSystem SR630**  
(2.60 GHz, Intel Xeon Gold 6240Y)

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

<table>
<thead>
<tr>
<th>SpecTest</th>
<th>Threads</th>
<th>SpecScore</th>
<th>TotalScore</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>72</td>
<td>6.73</td>
<td>6.73</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>72</td>
<td>9.94</td>
<td>9.94</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>72</td>
<td>12.5</td>
<td>12.5</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>72</td>
<td>7.63</td>
<td>7.63</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>72</td>
<td>12.5</td>
<td>12.5</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>72</td>
<td>23.9</td>
<td>23.9</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>72</td>
<td>5.43</td>
<td>5.43</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>72</td>
<td>4.76</td>
<td>4.76</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>72</td>
<td>14.1</td>
<td>14.1</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SPECspeed2017_int_base =** 9.97  
**SPECspeed2017_int_peak =** Not Run

## Hardware

- **CPU Name:** Intel Xeon Gold 6240Y  
- **Max MHz.:** 3900  
- **Nominal:** 2600  
- **Enabled:** 36 cores, 2 chips, 2 threads/core  
- **Orderable:** 1,2 chips  
- **Cache L1:** 32 KB I + 32 KB D on chip per core  
- **Cache L2:** 1 MB I+D on chip per core  
- **Cache L3:** 24.75 MB I+D on chip per chip  
- **Other:** None  
- **Memory:** 384 GB (24 x 16 GB 2Rx8 PC4-2933Y-R)  
- **Storage:** 1 x 800 GB SATA SSD  
- **Other:** None

## Software

- **OS:** SUSE Linux Enterprise Server 12 SP4 (x86_64)  
  - Kernel 4.12.14-94.41-default  
- **Compiler:** C/C++: Version 19.0.1.144 of Intel C/C++  
  - Compiler Build 20181018 for Linux:  
- **Fortran:** Version 19.0.1.144 of Intel Fortran  
  - Compiler Build 20181018 for Linux  
- **Parallel:** Yes  
- **Firmware:** Lenovo BIOS Version IVE135P 2.10 released Feb-2019  
- **File System:** btrfs  
- **System State:** Run level 3 (multi-user)  
- **Base Pointers:** 64-bit  
- **Peak Pointers:** Not Applicable  
- **Other:** jemalloc memory allocator V5.0.1
Lenovo Global Technology
ThinkSystem SR630
(2.60 GHz, Intel Xeon Gold 6240Y)

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

SPECspeed2017_int_base = 9.97
SPECspeed2017_int_peak = Not Run

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base Threads</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Threads</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
<th>Base Threads</th>
<th>Base Seconds</th>
<th>Base Ratio</th>
<th>Peak Threads</th>
<th>Peak Seconds</th>
<th>Peak Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>72</td>
<td>264</td>
<td>6.73</td>
<td>72</td>
<td>263</td>
<td>6.74</td>
<td>72</td>
<td>267</td>
<td>6.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>72</td>
<td>412</td>
<td>9.67</td>
<td>72</td>
<td>400</td>
<td>9.94</td>
<td>72</td>
<td>399</td>
<td>9.98</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>72</td>
<td>380</td>
<td>12.4</td>
<td>72</td>
<td>378</td>
<td>12.5</td>
<td>72</td>
<td>377</td>
<td>12.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>72</td>
<td>214</td>
<td>7.62</td>
<td>72</td>
<td>214</td>
<td>7.63</td>
<td>72</td>
<td>213</td>
<td>7.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>72</td>
<td>113</td>
<td>12.5</td>
<td>72</td>
<td>114</td>
<td>12.5</td>
<td>72</td>
<td>113</td>
<td>12.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>625.x264_s</td>
<td>72</td>
<td>126</td>
<td>14.0</td>
<td>72</td>
<td>126</td>
<td>14.0</td>
<td>72</td>
<td>125</td>
<td>14.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>72</td>
<td>264</td>
<td>5.43</td>
<td>72</td>
<td>263</td>
<td>5.45</td>
<td>72</td>
<td>264</td>
<td>5.43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>641.leela_s</td>
<td>72</td>
<td>358</td>
<td>4.76</td>
<td>72</td>
<td>358</td>
<td>4.77</td>
<td>72</td>
<td>358</td>
<td>4.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>72</td>
<td>209</td>
<td>14.1</td>
<td>72</td>
<td>210</td>
<td>14.0</td>
<td>72</td>
<td>209</td>
<td>14.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>657.xz_s</td>
<td>72</td>
<td>258</td>
<td>23.9</td>
<td>72</td>
<td>258</td>
<td>23.9</td>
<td>72</td>
<td>258</td>
<td>23.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SPECspeed2017_int_base = 9.97
SPECspeed2017_int_peak = Not Run

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

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

General Notes

Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2017-1.0.5-ic19.0u1/lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/cpu2017-1.0.5-ic19.0u1/je5.0.1-64"
OMP_STACKSIZE = "192M"

Binaries compiled on a system with 1x Intel Core i9-7900X CPU + 32GB RAM memory using Redhat Enterprise Linux 7.5
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
Yes: 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.
Yes: The test sponsor attests, as of date of publication, that CVE-2018-3640 (Spectre variant 3a) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2018-3639 (Spectre variant 4) 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

(Continued on next page)
Lenovo Global Technology

ThinkSystem SR630
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECspeed2017_int_base = 9.97
SPECspeed2017_int_peak = Not Run

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

Test Date: Apr-2019
Hardware Availability: Apr-2019
Software Availability: Dec-2018

General Notes (Continued)


Platform Notes

BIOS configuration:
Choose Operating Mode set to Maximum Performance
Choose Operating Mode set to Custom Mode
C-states set to Legacy
Sysinfo program /home/cpu2017-1.0.5-ic19.0u1/bin/sysinfo
Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
running on linux-v7my Fri Apr 26 22:03:21 2019

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 6240Y CPU @ 2.60GHz
  2 "physical id"s (chips)
  72 "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 : 18
siblings : 36
physical 0: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27
physical 1: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

From lscpu:
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                72
On-line CPU(s) list:   0-71
Thread(s) per core:    2
Core(s) per socket:    18
Socket(s):             2
NUMA node(s):          2
Vendor ID:             GenuineIntel
CPU family:            6
Model:                 85
Model name:            Intel(R) Xeon(R) Gold 6240Y CPU @ 2.60GHz
Stepping:              7
CPU MHz:               2600.000
CPU max MHz:           3900.0000
CPU min MHz:           1000.0000
BogoMIPS:              5200.00

(Continued on next page)
SPEC CPU2017 Integer Speed Result

Lenovo Global Technology

ThinkSystem SR630
(2.60 GHz, Intel Xeon Gold 6240Y)

Red Hat Enterprise Linux Server 7.4 (Maipo)

Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              1024K
L3 cache:              25344K
NUMA node0 CPU(s):     0-17,36-53
NUMA node1 CPU(s):     18-35,54-71
Flags:                 fpu vme de pse tsc msr pae mce 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
                       aperfmperf pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
                       xtrm 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 cdp_l3
                       invpcid_single ssbd mba ibrs ibpb stibp tpr_shadow vnmi flexpriority ept pvd
                       fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erm s invpcid rtm cqm mpx rdt_a
                       avx512f avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw
                       avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                       cqm_mbm_local dtherm ida arat pin pts pku ospke avx512_vnni flush_l1d

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 36 37 38 39 40 41 42 43 44 45
   46 47 48 49 50 51 52 53
   node 0 size: 193119 MB
   node 0 free: 192395 MB
   node 1 cpus: 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 54 55 56 57 58 59
   60 61 62 63 64 65 66 67 68 69 70 71
   node 1 size: 193477 MB
   node 1 free: 193151 MB
   node distances:
   node 0 1
   0: 10 21
   1: 21 10

From /proc/meminfo
   MemTotal:       395875324 kB
   HugePages_Total:       0
   Hugepagesize:        2048 kB

From /etc/*release* /etc/*version*
   SuSE-release:
      SUSE Linux Enterprise Server 12 (x86_64)
      VERSION = 12

(Continued on next page)
Platform Notes (Continued)

PATCHLEVEL = 4
# This file is deprecated and will be removed in a future service pack or release.
# Please check /etc/os-release for details about this release.

os-release:
  NAME="SLES"
  VERSION="12-SP4"
  VERSION_ID="12.4"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP4"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp4"

uname -a:
  x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2017-5754 (Meltdown): Not affected
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Indirect Branch Restricted Speculation, IBPB, IBRS_FW

run-level 3 Apr 26 22:02

SPEC is set to: /home/cpu2017-1.0.5-ic19.0u1
  Filesystem  Type    Size  Used Avail Use% Mounted on
  /dev/sdb3   btrfs  740G  33G  708G   5% /home

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.
  BIOS Lenovo -[IVE135P-2.10]- 02/13/2019
  Memory:
    24x Samsung M393A2K43CB2-CVF 16 GB 2 rank 2933

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
| CC  600.perlibench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base) |
|  657.xz_s(base) |
==============================================================================

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
## Lenovo Global Technology

**ThinkSystem SR630**

(2.60 GHz, Intel Xeon Gold 6240Y)

<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>

**SPECSpeed2017_int_base = 9.97**

**SPECSpeed2017_int_peak = Not Run**

**Test Date:** Apr-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Dec-2018

### Compiler Version Notes (Continued)

Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

CELERON D 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base) 641.leela_s(base)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

CELERON D 648.exchange2_s(base)

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)  
64, Version 19.0.1.144 Build 20181018  
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

---

### Base Compiler Invocation

C benchmarks:

`icc -m64 -std=c11`

C++ benchmarks:

`icpc -m64`

Fortran benchmarks:

`ifort -m64`

### Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64  
602.gcc_s: -DSPEC_LP64  
605.mcf_s: -DSPEC_LP64  
620.omnetpp_s: -DSPEC_LP64  
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX  
625.x264_s: -DSPEC_LP64  
631.deepsjeng_s: -DSPEC_LP64  
641.leela_s: -DSPEC_LP64  
648.exchange2_s: -DSPEC_LP64

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR630
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECspeed2017_int_base = 9.97
SPECspeed2017_int_peak = Not Run

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

Test Date: Apr-2019
Hardware Availability: Apr-2019
Software Availability: Dec-2018

Base Portability Flags (Continued)

657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -qopenmp -DSPEC_OPENMP
-L/usr/local/je5.0.1-64/lib -ljemalloc

C++ benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
-lqkmalloc

Fortran benchmarks:
-xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-mem-layout-trans=4
-nostandard-realloc-lhs

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-CLX-A.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-CLX-A.xml

SPEC is a registered trademark 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 CPU2017 v1.0.5 on 2019-04-26 10:03:20-0400.