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<tr>
<th>Threads</th>
<th>SPECspeed2017_int_base (10.9)</th>
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<tr>
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<tr>
<td>602.gcc_s</td>
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<td>605.mcf_s</td>
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<tr>
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<td>32</td>
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<tr>
<td>623.xalanchmk_s</td>
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<tr>
<td>625.x264_s</td>
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<tr>
<td>631.deepsjeng_s</td>
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<tr>
<td>641.leela_s</td>
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</tr>
<tr>
<td>648.exchange2_s</td>
<td>32</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>32</td>
</tr>
</tbody>
</table>

**Hardware**

- **CPU Name:** Intel Xeon Gold 6244
- **Max MHz.:** 4400
- **Nominal:** 3600
- **Enabled:** 16 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
- **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
(3.60 GHz, Intel Xeon Gold 6244)

SPECSpeed2017_int_base = 10.9
SPECSpeed2017_int_peak = Not Run

Results Table

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<th>Seconds</th>
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<td>24.2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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-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 3) 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**  
(3.60 GHz, Intel Xeon Gold 6244)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base = 10.9</th>
<th>Test Date: Apr-2019</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th>SPECspeed2017_int_peak = Not Run</th>
<th>Hardware Availability: Apr-2019</th>
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</thead>
</table>

**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-ptrp Sun Apr 21 21:21:44 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 6244 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 4 8 17 18 19 24 25 27  
  physical 1: cores 2 3 4 8 17 20 24 26

---

From lscpu:

- 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): 2  
- Vendor ID: GenuineIntel  
- CPU family: 6  
- Model: 85  
- Model name: Intel(R) Xeon(R) Gold 6244 CPU @ 3.60GHz  
- Stepping: 6  
- CPU MHz: 3600.000  
- CPU max MHz: 4400.0000  
- CPU min MHz: 1200.0000  
- BogoMIPS: 7200.00

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(Continued on next page)
Lenovo Global Technology

ThinkSystem SR630
(3.60 GHz, Intel Xeon Gold 6244)

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SPEC CPU2017 Integer Speed Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

SPECspeed2017_int_base = 10.9
SPECspeed2017_int_peak = Not Run

Platform Notes (Continued)

Virtualization:        VT-x
L1d cache:             32K
L1i cache:             32K
L2 cache:              1024K
L3 cache:              25344K
NUMA node0 CPU(s):     0,16-23
NUMA node1 CPU(s):     8-15,24-31
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
                       xtrr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
                       avx f16c rdrand lahf_lm abm 3nowprefetch cpuid_fault epb cat_l3 cdp_l3
                       invpcid_single ssbd mba ibrs ibpb stibp tpr_shadow vnmi flexpriority ept vpid
                       fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 ermi invpcid rtm cqm mpx rdt_a avx512f
                       avx512dq rdseed adx smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl
                       xsaveopt xsaves xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbb_total cqm_mbb_local
dtherm ida arat pin pts pku ospke avx512_vnni flush_l1d arch_capabilities

/proccpuinfo cache data
   cache size: 25344 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 16 17 18 19 20 21 22 23
   node 0 size: 193123 MB
   node 0 free: 192487 MB
   node 1 cpus: 8 9 10 11 12 13 14 15 24 25 26 27 28 29 30 31
   node 1 size: 193480 MB
   node 1 free: 193101 MB
   node distances:
   node 0 1
   0: 10 21
   1: 21 10

From /proc/meminfo
   MemTotal: 395882488 KB
   HugePages_Total: 0
   Hugepagesize: 2048 KB

From /etc/*release* /etc/*version*
   SuSE-release:
   SUSE Linux Enterprise Server 12 (x86_64)
   VERSION = 12
   PATCHLEVEL = 4
   # This file is deprecated and will be removed in a future service pack or release.

(Continued on next page)
Platform Notes (Continued)

# 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 21 21:18

SPEC is set to: /home/cpu2017-1.0.5-ic19.0u1
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/sda2 btrfs 744G 36G 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)
## Lenovo Global Technology

**ThinkSystem SR630**
(3.60 GHz, Intel Xeon Gold 6244)

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

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<td>Software Availability</td>
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### Compiler Version Notes (Continued)

---

**CXXC** 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.

---

**FC** 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  
657.xz_s: -DSPEC_LP64
**SPEC CPU2017 Integer Speed Result**

**Lenovo Global Technology**

ThinkSystem SR630  
(3.60 GHz, Intel Xeon Gold 6244)

---

**SPECspeed2017_int_base** = 10.9  
**SPECspeed2017_int_peak** = Not Run

---

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

---

**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`  
- `-lgkmalloc`

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:

You can also download the XML flags sources by saving the following links:

---

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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 2019-04-21 09:21:44-0400.  