## Lenovo Global Technology

ThinkSystem SR590  
(1.70 GHz, Intel Xeon Bronze 3106)

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon Bronze 3106</td>
<td>OS: SUSE Linux Enterprise Server 12 SP3 (x86_64)</td>
</tr>
<tr>
<td>Max MHz.: 1700</td>
<td>Kernel 4.4.73-5-default</td>
</tr>
<tr>
<td>Nominal: 1700</td>
<td>Compiler: C/C++: Version 18.0.0.128 of Intel C/C++</td>
</tr>
<tr>
<td>Enabled: 16 cores, 2 chips</td>
<td>Compiler for Linux: Fortran: Version 18.0.0.128 of Intel Fortran</td>
</tr>
<tr>
<td>Orderable: 1,2 chips</td>
<td>Compiler for Linux:</td>
</tr>
<tr>
<td>Cache L1: 32 KB I + 32 KB D on chip per core</td>
<td>Parallel: Yes</td>
</tr>
<tr>
<td>L2: 1 MB I+D on chip per core</td>
<td>Firmware: Lenovo BIOS Version TEE119J 1.20 released Sep-2017</td>
</tr>
<tr>
<td>L3: 11 MB I+D on chip per chip</td>
<td>File System: btrfs</td>
</tr>
<tr>
<td>Other: None</td>
<td>System State: Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2666V-R, running at 2133)</td>
<td>Base Pointers: 64-bit</td>
</tr>
<tr>
<td>Storage: 1 x 800 GB SAS SSD</td>
<td>Peak Pointers: 32/64-bit</td>
</tr>
<tr>
<td>Other: None</td>
<td>Other: jemalloc: jemalloc memory allocator library V5.0.1;</td>
</tr>
<tr>
<td></td>
<td>jemalloc: configured and built at default for 32bit (i686) and 64bit (x86_64) targets;</td>
</tr>
<tr>
<td></td>
<td>jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5;</td>
</tr>
<tr>
<td></td>
<td>jemalloc: sources available from jemalloc.net or releases</td>
</tr>
</tbody>
</table>

---

**SPEC® CPU2017 Integer Speed Result**

SPECspeed2017_int_base = 4.26  
SPECspeed2017_int_peak = 4.39

---

<table>
<thead>
<tr>
<th>Test Date: Dec-2017</th>
<th>Test Sponsor: Lenovo Global Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Availability: Nov-2017</td>
<td>Tested by: Lenovo Global Technology</td>
</tr>
<tr>
<td>Software Availability: Sep-2017</td>
<td>Lenovo Global Technology</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>SPECspeed2017_int_base (4.26)</th>
<th>SPECspeed2017_int_peak (4.39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>16</td>
<td>2.85</td>
<td>3.43</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>16</td>
<td>4.70</td>
<td>4.83</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>16</td>
<td>3.06</td>
<td>3.13</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>16</td>
<td>4.52</td>
<td>4.77</td>
</tr>
<tr>
<td>623.xalancbmk_s</td>
<td>16</td>
<td>5.43</td>
<td>5.43</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>16</td>
<td>2.52</td>
<td>2.50</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>16</td>
<td>2.00</td>
<td>2.00</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>16</td>
<td>6.12</td>
<td>6.12</td>
</tr>
<tr>
<td>648.exchange2_s</td>
<td>16</td>
<td>10.9</td>
<td>10.8</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>16</td>
<td>6.12</td>
<td>6.12</td>
</tr>
</tbody>
</table>

---

**Hardware**

CPU Name: Intel Xeon Bronze 3106  
Max MHz.: 1700  
Nominal: 1700  
Enabled: 16 cores, 2 chips  
Orderable: 1,2 chips  
Cache L1: 32 KB I + 32 KB D on chip per core  
L2: 1 MB I+D on chip per core  
L3: 11 MB I+D on chip per chip  
Other: None  
Memory: 384 GB (12 x 32 GB 2Rx4 PC4-2666V-R, running at 2133)  
Storage: 1 x 800 GB SAS SSD  
Other: None

---

**Software**

OS: SUSE Linux Enterprise Server 12 SP3 (x86_64)  
Kernel 4.4.73-5-default  
Compiler: C/C++: Version 18.0.0.128 of Intel C/C++  
Compiler for Linux: Fortran: Version 18.0.0.128 of Intel Fortran  
Parallel: Yes  
Firmware: Lenovo BIOS Version TEE119J 1.20 released Sep-2017  
File System: btrfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other: jemalloc: jemalloc memory allocator library V5.0.1;  
jemalloc: configured and built at default for 32bit (i686) and 64bit (x86_64) targets;  
jemalloc: built with the RedHat Enterprise 7.4, and the system compiler gcc 4.8.5;  
jemalloc: sources available from jemalloc.net or releases
SPEC CPU2017 Integer Speed Result

Lennovo Global Technology
ThinkSystem SR590
(1.70 GHz, Intel Xeon Bronze 3106)

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

SPECspeed2017_int_base = 4.26
SPECspeed2017_int_peak = 4.39

Results Table

<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>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>16</td>
<td>622</td>
<td>2.85</td>
<td>622</td>
<td>2.85</td>
<td>622</td>
<td>2.85</td>
<td>16</td>
<td>521</td>
<td>3.41</td>
<td>517</td>
<td>3.43</td>
<td>518</td>
<td>3.43</td>
</tr>
<tr>
<td>602.gcc_s</td>
<td>16</td>
<td>844</td>
<td>4.72</td>
<td>846</td>
<td>4.70</td>
<td>847</td>
<td>4.70</td>
<td>16</td>
<td>824</td>
<td>4.83</td>
<td>824</td>
<td>4.83</td>
<td>826</td>
<td>4.82</td>
</tr>
<tr>
<td>605.mcf_s</td>
<td>16</td>
<td>809</td>
<td>5.83</td>
<td>808</td>
<td>5.85</td>
<td>807</td>
<td>5.85</td>
<td>16</td>
<td>800</td>
<td>5.90</td>
<td>803</td>
<td>5.88</td>
<td>800</td>
<td>5.90</td>
</tr>
<tr>
<td>620.omnetpp_s</td>
<td>16</td>
<td>531</td>
<td>3.07</td>
<td>534</td>
<td>3.05</td>
<td>532</td>
<td>3.06</td>
<td>16</td>
<td>521</td>
<td>3.13</td>
<td>520</td>
<td>3.14</td>
<td>530</td>
<td>3.08</td>
</tr>
<tr>
<td>623.xalanchmk_s</td>
<td>16</td>
<td>313</td>
<td>4.52</td>
<td>315</td>
<td>4.50</td>
<td>311</td>
<td>4.55</td>
<td>16</td>
<td>297</td>
<td>4.77</td>
<td>297</td>
<td>4.78</td>
<td>297</td>
<td>4.77</td>
</tr>
<tr>
<td>625.x264_s</td>
<td>16</td>
<td>324</td>
<td>5.44</td>
<td>325</td>
<td>5.42</td>
<td>325</td>
<td>5.43</td>
<td>16</td>
<td>325</td>
<td>5.43</td>
<td>325</td>
<td>5.43</td>
<td>324</td>
<td>5.44</td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>16</td>
<td>569</td>
<td>2.52</td>
<td>569</td>
<td>2.52</td>
<td>569</td>
<td>2.52</td>
<td>16</td>
<td>572</td>
<td>2.51</td>
<td>572</td>
<td>2.50</td>
<td>572</td>
<td>2.50</td>
</tr>
<tr>
<td>641.leela_s</td>
<td>16</td>
<td>855</td>
<td>2.00</td>
<td>855</td>
<td>2.00</td>
<td>855</td>
<td>2.00</td>
<td>16</td>
<td>853</td>
<td>2.00</td>
<td>852</td>
<td>2.00</td>
<td>852</td>
<td>2.00</td>
</tr>
<tr>
<td>657.xz_s</td>
<td>16</td>
<td>571</td>
<td>10.8</td>
<td>573</td>
<td>10.8</td>
<td>574</td>
<td>10.8</td>
<td>16</td>
<td>569</td>
<td>10.9</td>
<td>569</td>
<td>10.9</td>
<td>568</td>
<td>10.9</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:
LD_LIBRARY_PATH = "/home/cpu2017.1.0.2.ic18.0/lib/ia32:/home/cpu2017.1.0.2.ic18.0/lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/cpu2017.1.0.2.ic18.0/je5.0.1-32:/home/cpu2017.1.0.2.ic18.0/je5.0.1-64"
OMP_STACKSIZE = "192M"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.4
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
No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
No: 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.
No: 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.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.

The system as described on this result page was formerly

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR590
(1.70 GHz, Intel Xeon Bronze 3106)

SPECspeed2017_int_base = 4.26
SPECspeed2017_int_peak = 4.39

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

General Notes (Continued)

generally available. At the time of this publication, it may
not be shipping, and/or may not be supported, and/or may fail
meet other tests of General Availability described in the

This measured result may not be representative of the result
that would be measured were this benchmark run with hardware
and software available as of the publication date.

Platform Notes

BIOS configuration:
Choose Operating Mode set to Maximum Performance
Execute Disable Bit set to Disable
MONITORMWAIT set to Enable
Per Core P-state set to Disable
XPT Prefetcher set to Enable
Sysinfo program /home/cpu2017.1.0.2.ic18.0/bin/sysinfo
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f
running on SR590-2 Mon Dec 25 21:04:14 2017

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) Bronze 3106 CPU @ 1.70GHz
  2 "physical id"s (chips)
  16 "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 : 8
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7

From lscpu:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 16
On-line CPU(s) list: 0-15
Thread(s) per core: 1
Core(s) per socket: 8
Socket(s): 2
NUMA node(s): 2

(Continued on next page)
## Lenovo Global Technology

**ThinkSystem SR590**  
(1.70 GHz, Intel Xeon Bronze 3106)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_peak</th>
<th>4.39</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_base</td>
<td>4.26</td>
</tr>
</tbody>
</table>

| CPU2017 License: | 9017 |
| Test Sponsor:   | Lenovo Global Technology |
| Tested by:      | Lenovo Global Technology |
| Test Date:      | Dec-2017 |
| Hardware Availability: | Nov-2017 |
| Software Availability: | Sep-2017 |
| Vendor ID:      | GenuineIntel |
| CPU family:     | 6 |
| Model:          | 85 |
| Model name:     | Intel(R) Xeon(R) Bronze 3106 CPU @ 1.70GHz |
| Stepping:       | 4 |
| CPU MHz:        | 1696.019 |
| BogoMIPS:       | 3392.03 |
| Virtualization: | VT-x |
| L1d cache:      | 32K |
| L1i cache:      | 32K |
| L2 cache:       | 1024K |
| L3 cache:       | 11264K |
| NUMA node0 CPU(s): | 0-7 |
| NUMA node1 CPU(s): | 8-15 |
| 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 art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmperf eagerfpu 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 flac rdrand lahf_lm abm 3nowprefetch arat epb pln pts dtherm intel_pt tpr_shadow vmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 ets invpcid rtm cqm mpx avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd avx512bw avx512v1 xsaveopt xsavec xgetbv1 cmc_llc cmc_occup_llc pku ospke |

/proc/cpuinfo cache data  
```plaintext
cache size : 11264 KB
```

From numactl --hardware  
WARNING: a numactl 'node' might or might not correspond to a physical chip.  
```plaintext
available: 2 nodes (0-1)
node 0 cpus: 0 1 2 3 4 5 6 7
node 0 size: 192986 MB
node 0 free: 192540 MB
node 1 cpus: 8 9 10 11 12 13 14 15
node 1 size: 193517 MB
node 1 free: 193185 MB
node distances:
node 0 1
  0: 10 21
  1: 21 10
```

From /proc/meminfo  
```plaintext
MemTotal: 395780800 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

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

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR590
(1.70 GHz, Intel Xeon Bronze 3106)

SPECspeed2017_int_base = 4.26
SPECspeed2017_int_peak = 4.39

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

Platform Notes (Continued)

SuSE-release:
   SUSE Linux Enterprise Server 12 (x86_64)
   VERSION = 12
   PATCHLEVEL = 3
   # 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-SP3"
   VERSION_ID="12.3"
   PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
   ID="sles"
   ANSI_COLOR="0;32"
   CPE_NAME="cpe:/o:suse:sles:12:sp3"

uname -a:
   Linux SR590-2 4.4.73-5-default #1 SMP Tue Jul 4 15:33:39 UTC 2017 (b7ce4e4) x86_64
   x86_64 x86_64 GNU/Linux

run-level 3 Dec 25 21:02

SPEC is set to: /home/cpu2017.1.0.2.ic18.0

Filesystem     Type   Size  Used Avail Use% Mounted on
/dev/sdb2      btrfs  744G   88G  655G 12% /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 -[TEE119J-1.20]- 09/06/2017
   Memory:
      12x Hynix HMA84GR7AFR4N-VK 32 GB 2 rank 2666, configured at 2133
      4x NO DIMM NO DIMM

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
 CC  600.perlbench_s(base) 602.gcc_s(base) 605.mcf_s(base) 625.x264_s(base, peak) 657.xz_s(base)
==============================================================================

icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR590
(1.70 GHz, Intel Xeon Bronze 3106)

SPEC CPU2017 Integer Speed Result

SPECspeed2017_int_base = 4.26
SPECspeed2017_int_peak = 4.39

CPU2017 License: 9017
Test Sponsor: Lenovo Global Technology
Test Date: Dec-2017
Tested by: Lenovo Global Technology
Hardware Availability: Nov-2017
Software Availability: Sep-2017

Compiler Version Notes (Continued)

```
CC 600.perlbench_s(peak) 602.gcc_s(peak) 605.mcf_s(peak) 657.xz_s(peak)
```

```
icc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

```
CXXC 620.omnetpp_s(base) 623.xalancbmk_s(base) 631.deepsjeng_s(base)
  641.leela_s(base)
```

```
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

```
CXXC 620.omnetpp_s(peak) 623.xalancbmk_s(peak) 631.deepsjeng_s(peak)
  641.leela_s(peak)
```

```
icpc (ICC) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

```
FC 648.exchange2_s(base, peak)
```

```
ifort (IFORT) 18.0.0 20170811
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.
```

Base Compiler Invocation

C benchmarks:
iccc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort
SPEC CPU2017 Integer Speed Result

Lenovo Global Technology
ThinkSystem SR590
(1.70 GHz, Intel Xeon Bronze 3106)

SPECspeed2017_int_base = 4.26
SPECspeed2017_int_peak = 4.39

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

Test Date: Dec-2017
Hardware Availability: Nov-2017
Software Availability: Sep-2017

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

Base Optimization Flags

C benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -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=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

Fortran benchmarks:
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte
-L/usr/local/je5.0.1-64/lib -ljemalloc

Base Other Flags

C benchmarks:
-m64 -std=c11

C++ benchmarks:
-m64

Fortran benchmarks:
-m64
## Lenovo Global Technology

**ThinkSystem SR590**  
(1.70 GHz, Intel Xeon Bronze 3106)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>4.26</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECspeed2017_int_peak</td>
<td>4.39</td>
</tr>
</tbody>
</table>

<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>
<tr>
<td>Test Date</td>
<td>Dec-2017</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Nov-2017</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Sep-2017</td>
</tr>
</tbody>
</table>

### Peak Compiler Invocation

C benchmarks:
- **icc**

C++ benchmarks:
- **icpc**

Fortran benchmarks:
- **ifort**

### Peak 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: -D_FILE_OFFSET_BITS=64 -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

### Peak Optimization Flags

C benchmarks:

600.perlbench_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2  
-xCORE-AVX512 -qopt-mem-layout-trans=3 -ipo -O3  
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp  
-DSPEC_OPENMP -fno-strict-overflow  
-L/usr/local/je5.0.1-64/lib -ljemalloc

602.gcc_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -O2  
-xCORE-AVX512 -qopt-mem-layout-trans=3 -ipo -O3  
-no-prec-div -DSPEC_SUPPRESS_OPENMP -qopenmp  
-DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc

605.mcf_s: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX512 -qopt-mem-layout-trans=3

(Continued on next page)
Lenovo Global Technology
ThinkSystem SR590
(1.70 GHz, Intel Xeon Bronze 3106)

**SPEC CPU2017 Integer Speed Result**

| SPECspeed2017_int_base | 4.26 |
| SPECspeed2017_int_peak | 4.39 |

CPU2017 License: 9017
Test Date: Dec-2017
Test Sponsor: Lenovo Global Technology
Hardware Availability: Nov-2017
Tested by: Lenovo Global Technology
Software Availability: Sep-2017

**Peak Optimization Flags (Continued)**

- 625.x264_s: `-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div -qopt-mem-layout-trans=3 -gopenmp -DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc`
- 657.xz_s: Same as 602.gcc_s

C++ benchmarks:

- 620.omnetpp_s: `-Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=3 -DSPEC_SUPPRESS_OPENMP -gopenmp -DSPEC_OPENMP -L/usr/local/je5.0.1-64/lib -ljemalloc`
- 631.deepsjeng_s: Same as 620.omnetpp_s
- 641.leela_s: Same as 620.omnetpp_s

Fortran benchmarks:


**Peak Other Flags**

C benchmarks:

- `-m64 -std=c11`

C++ benchmarks (except as noted below):

- `-m64`

- 623.xalancbmk_s: `-m32`

Fortran benchmarks:

- `-m64`
**SPEC CPU2017 Integer Speed Result**

**Lenovo Global Technology**

**ThinkSystem SR590**  
(1.70 GHz, Intel Xeon Bronze 3106)

<table>
<thead>
<tr>
<th>SPECspeed2017_int_base</th>
<th>SPECspeed2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.26</td>
<td>4.39</td>
</tr>
</tbody>
</table>

**Tested with SPEC CPU2017 v1.0.2 on 2017-12-25 08:04:13-0500.**

**Report generated on 2018-10-31 16:49:43 by CPU2017 PDF formatter v6067.**

**Originally published on 2018-03-06.**

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.

The flags files that were used to format this result can be browsed at:

- [http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.html](http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.html)

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

- [http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.xml](http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.xml)