**Lenovo Global Technology**

**Thinksystem SR250**

(3.50 GHz, Intel Xeon E-2134)

---

**SPECrate2017_int_base** = 29.9

**SPECrate2017_int_peak** = Not Run

---

**Hardware**

- **CPU Name:** Intel Xeon E-2134
- **Max MHz.:** 4500
- **Nominal:** 3500
- **Enabled:** 4 cores, 1 chip, 2 threads/core
- **Orderable:** 1 chip
- **Cache L1:** 32 KB I + 32 KB D on chip per core
- **Cache L2:** 256 KB I+D on chip per core
- **Cache L3:** 8 MB I+D on chip per chip
- **Other:** None
- **Memory:** 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)
- **Storage:** 1 x 480 GB SATA SSD
- **Other:** None

**Software**

- **OS:** SUSE Linux Enterprise Server 12 SP3 (x86_64)
- **Kernel:** 4.4.131-94.29-default
- **Compiler:** C/C++: Version 18.0.2.199 of Intel C/C++ Compiler for Linux;
  Fortran: Version 18.0.2.199 of Intel Fortran Compiler for Linux
- **Parallel:** No
- **Firmware:** Lenovo BIOS Version ISE105G 1.01 released Oct-2018
- **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

---

**Test Date:** Nov-2018

**Hardware Availability:** Jan-2019

**Software Availability:** May-2018

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**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

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**CPU2017 License:** 9017

**Test Date:** Nov-2018

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| Copies | 3.00 | 6.00 | 9.00 | 12.0 | 15.0 | 18.0 | 21.0 | 24.0 | 27.0 | 30.0 | 33.0 | 36.0 | 39.0 | 42.0 | 45.0 | 48.0 | 51.0 | 54.0 | 57.0 | 60.0 | 63.0 |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 500.perlbench_r | 8 | 24.1 | 24.1 |
| 502.gcc_r | 8 | 27.8 | 35.7 |
| 505.mcf_r | 8 | 17.2 | 17.2 |
| 520.omnetpp_r | 8 | 28.9 | 62.9 |
| 523.xalancmk_r | 8 | 27.7 | 27.7 |
| 525.x264_r | 8 | 24.9 | 24.9 |
| 531.deepsjeng_r | 8 | 28.8 | 58.8 |
| 541.leela_r | 8 | 18.7 | 18.7 |
| 548.exchange2_r | 8 | 24.1 | 24.1 |
| 557.xz_r | 8 | 27.7 | 27.7 |

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**SPECrates2017_int_base** (29.9)
**Lenovo Global Technology**

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(3.50 GHz, Intel Xeon E-2134)

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<td>462</td>
<td>18.7</td>
</tr>
</tbody>
</table>

**Results Table**

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

**Submit Notes**

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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"

**General Notes**

Environment variables set by runcpu before the start of the run:

LD_LIBRARY_PATH = "/home/cpu2017-1.0.5-ic18.0u2/lib/ia32:/home/cpu2017-1.0.5-ic18.0u2/lib/intel64"
LD_LIBRARY_PATH = "$LD_LIBRARY_PATH:/home/cpu2017-1.0.5-ic18.0u2/je5.0.1-32:/home/cpu2017-1.0.5-ic18.0u2/je5.0.1-64"

Binaries compiled on a system with 1x Intel Core i7-6700K 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.

jemalloc, a general purpose malloc implementation

(Continued on next page)
**SPEC CPU2017 Integer Rate Result**

**Lenovo Global Technology**

**Thinksystem SR250**

(3.50 GHz, Intel Xeon E-2134)

<table>
<thead>
<tr>
<th>CPU2017 License: 9017</th>
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**SPECrate2017_int_base = 29.9**

**SPECrate2017_int_peak = Not Run**

---

**General Notes (Continued)**

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

Choose Operating Mode set to Custom Mode

CPU P-state Control set to Legacy

Execute Disable Bit set to Disable

Per Core P-state set to Disable

Adjacent Cache Prefetch set to Disable

Sysinfo program /home/cpu2017-1.0.5-ic18.0u2/bin/sysinfo

Rev: r5974 of 2018-05-19 9bcede8f2999c33d61f64985e45859ea9

running on linux-ys4m Tue Nov 27 09:26:57 2018

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) E-2134 CPU @ 3.50GHz

1 "physical id"s (chips)
8 "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 : 4
siblings : 8
physical 0: cores 0 1 2 3

From lscpu:

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 8
On-line CPU(s) list: 0-7
Thread(s) per core: 2
Core(s) per socket: 4
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
Model name: Intel(R) Xeon(R) E-2134 CPU @ 3.50GHz
Stepping: 10
CPU MHz: 4461.629

(Continued on next page)
Lenovo Global Technology

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**SPECrate2017_int_base =** 29.9  
**SPECrate2017_int_peak =** Not Run

### Platform Notes (Continued)

- CPU max MHz: 4500.0000
- CPU min MHz: 800.0000
- BogoMIPS: 7007.97
- Virtualization: VT-x
- L1d cache: 32K
- L1i cache: 32K
- L2 cache: 256K
- L3 cache: 8192K
- NUMA node0 CPU(s): 0-7
- 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 rdtsscp lm constant_tsc arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc aperfmpref64 eagerfpu ncpu pslrn dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid sse4_1 sse4_2 x2apic movbe popcnt rdtscp ldrcr tm2 tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epb invpcid_single pln pts dtherm hwp hwp_notify hwp_act_window hwp-epp intel_pt rsb_cxsw spec_ctrl stibp ssbd retpoline kaiser tpr_shadow vmx flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt xsaveopt xsavec xgetbv1

```
/proc/cpuinfo cache data
  cache size : 8192 KB
```

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a physical chip.

```
  available: 1 nodes (0)
  node 0 cpus: 0 1 2 3 4 5 6 7
  node 0 size: 64381 MB
  node 0 free: 63893 MB
  node distances:
    node 0
    0: 10
```

From /proc/meminfo

```
  MemTotal: 65926808 kB
  HugePages_Total: 0
  Hugepagesize: 2048 kB
```

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

**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"
```

(Continued on next page)
SPEC CPU2017 Integer Rate Result

Lenovo Global Technology
Thinksystem SR250
(3.50 GHz, Intel Xeon E-2134)

CPU2017 License: 9017
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Hardware Availability: Jan-2019
Software Availability: May-2018

Platform Notes (Continued)

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 linux-ys4m 4.4.131-94.29-default #1 SMP Mon May 21 14:41:34 UTC 2018 (f49bc78)
x86_64 x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2017-5754 (Meltdown): Mitigation: PTI
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: IBRS+IBPB

run-level 3 Nov 27 09:17

SPEC is set to: /home/cpu2017-1.0.5-ic18.0u2

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 btrfs 446G 19G 427G 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 -[ISE105G-1.01]- 10/25/2018
Memory:
4x Micron 18ASF2G72AZ-2G6D1 16 GB 2 rank 2666

(End of data from sysinfo program)

Compiler Version Notes

=================================================================================
CC 500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base) 525.x264_r(base)
557.xz_r(base)
=================================================================================

icc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
=================================================================================

CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
541.leela_r(base)

(Continued on next page)
Lenovo Global Technology
Thinksystem SR250
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SPECrater2017_int_base = 29.9
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Test Date: Nov-2018
Hardware Availability: Jan-2019
Software Availability: May-2018

Compiler Version Notes (Continued)

icpc (ICC) 18.0.2 20180210
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

FC 548.exchange2_r(base)

ifort (IFORT) 18.0.2 20180210
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

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leelar_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
  -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
  -qopt-mem-layout-trans=3 -L/usr/local/je5.0.1-64/lib -ljemalloc

(Continued on next page)
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### Base Optimization Flags (Continued)

#### C++ benchmarks:

- `-Wl,-z,muldefs -xCORE-AVX2 -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-AVX2 -ipo -O3 -no-prec-div`
- `-qopt-mem-layout-trans=3 -nostandard-realloc-lhs`
- `-L/usr/local/je5.0.1-64/lib -ljemalloc`

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 2018-11-26 20:26:56-0500.