



SPEC® CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_base = 452

SPECrate2017_int_peak = Not Run

CPU2017 License: 9017

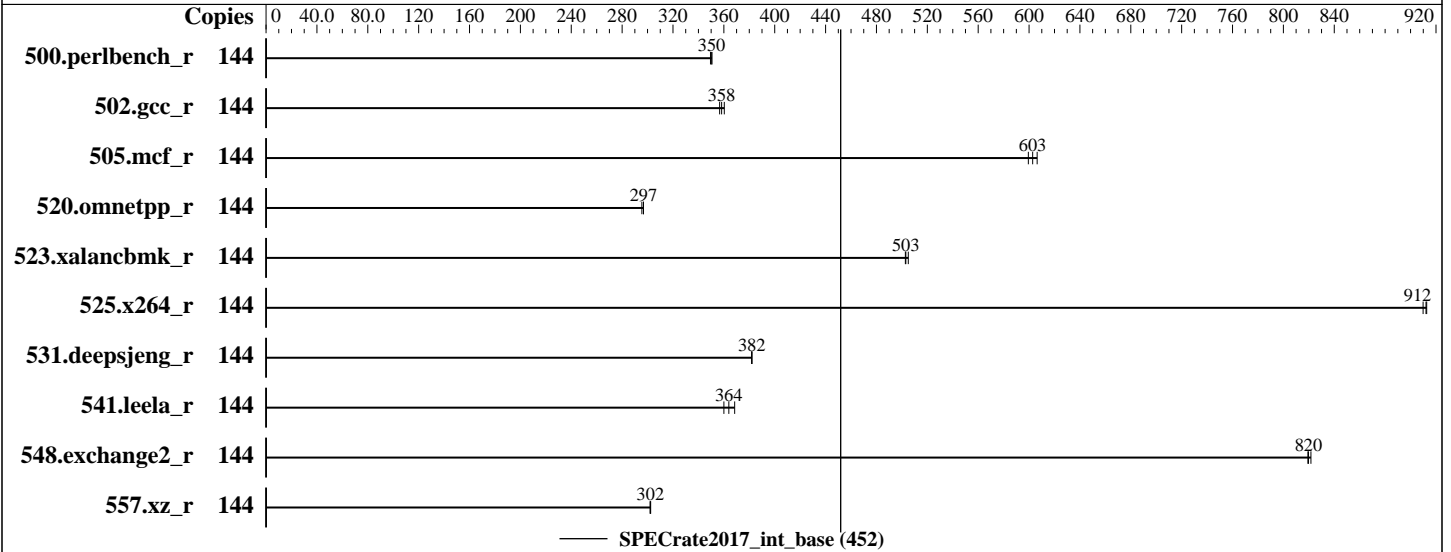
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Apr-2019

Hardware Availability: Apr-2019

Software Availability: Nov-2018



Hardware

CPU Name: Intel Xeon Gold 6240Y
 Max MHz.: 3900
 Nominal: 2600
 Enabled: 72 cores, 4 chips, 2 threads/core
 Orderable: 2,3,4 chips
 Cache L1: 32 KB I + 32 KB D on chip per core
 L2: 1 MB I+D on chip per core
 L3: 24.75 MB I+D on chip per chip
 Other: None
 Memory: 1536 GB (48 x 32 GB 2Rx4 PC4-2933Y-R)
 Storage: 1 x 800 GB SATA SSD
 Other: None

Software

OS: SUSE Linux Enterprise Server 15 (x86_64)
 Kernel 4.12.14-25.13-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: No
 Firmware: Lenovo BIOS Version PSE122N 1.50 released May-2019 tested as PSE1211 1.50 Mar-2019
 File System: xfs
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: Not Applicable
 Other: None



SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_base = 452

SPECrate2017_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: Nov-2018

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	144	656	349	654	350	654	351							
502.gcc_r	144	566	360	572	357	569	358							
505.mcf_r	144	386	603	388	599	384	606							
520.omnetpp_r	144	639	296	637	297	637	297							
523.xalancbmk_r	144	302	503	302	503	301	505							
525.x264_r	144	276	912	277	910	276	913							
531.deepsjeng_r	144	432	382	432	382	432	382							
541.leela_r	144	662	360	655	364	647	369							
548.exchange2_r	144	460	820	459	822	461	819							
557.xz_r	144	515	302	515	302	514	302							

SPECrate2017_int_base = 452

SPECrate2017_int_peak = Not Run

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"

General Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017-1.0.5-ic19.0u1/lib/intel64"

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
```

runcpu command invoked through numactl i.e.:

```
numactl --interleave=all runcpu <etc>
```

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)

(Continued on next page)



SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrate2017_int_base = 452

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_peak = Not Run

CPU2017 License: 9017

Test Date: Apr-2019

Test Sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

Software Availability: Nov-2018

General Notes (Continued)

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.

Platform Notes

BIOS configuration:

Choose Operating Mode set to Maximum Performance

Choose Operating Mode set to Custom Mode

DCU Streamer Prefetcher set to Disable

MONITOR/MWAIT set to Enable

SNC set to Enable

Sysinfo program /home/cpu2017-1.0.5-ic19.0ul/bin/sysinfo

Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9

running on linux-ulb8 Sun Apr 28 08:47:48 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

4 "physical id"s (chips)

144 "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

physical 2: cores 0 1 2 3 4 8 9 10 11 16 17 18 19 20 24 25 26 27

physical 3: 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): 144

On-line CPU(s) list: 0-143

Thread(s) per core: 2

Core(s) per socket: 18

Socket(s): 4

NUMA node(s): 8

Vendor ID: GenuineIntel

(Continued on next page)



SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrate2017_int_base = 452

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_peak = Not Run

CPU2017 License: 9017

Test Date: Apr-2019

Test Sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

Software Availability: Nov-2018

Platform Notes (Continued)

```

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
Virtualization:       VT-x
L1d cache:            32K
L1i cache:            32K
L2 cache:             1024K
L3 cache:             25344K
NUMA node0 CPU(s):   0-2,5,6,9,10,14,15,72-74,77,78,81,82,86,87
NUMA node1 CPU(s):   3,4,7,8,11-13,16,17,75,76,79,80,83-85,88,89
NUMA node2 CPU(s):   18-20,23,24,27,28,32,33,90-92,95,96,99,100,104,105
NUMA node3 CPU(s):   21,22,25,26,29-31,34,35,93,94,97,98,101-103,106,107
NUMA node4 CPU(s):   36-38,41,42,45,46,50,51,108-110,113,114,117,118,122,123
NUMA node5 CPU(s):   39,40,43,44,47-49,52,53,111,112,115,116,119-121,124,125
NUMA node6 CPU(s):   54-56,59,60,63,64,68,69,126-128,131,132,135,136,140,141
NUMA node7 CPU(s):   57,58,61,62,65-67,70,71,129,130,133,134,137-139,142,143
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 cpuid
aperfmpperf 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 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 erms 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 pln pts pku ospke avx512_vnni flush_lld arch_capabilities

```

```

/proc/cpuinfo cache data
cache size : 25344 KB

```

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

```

available: 8 nodes (0-7)
node 0 cpus: 0 1 2 5 6 9 10 14 15 72 73 74 77 78 81 82 86 87
node 0 size: 193127 MB
node 0 free: 192807 MB
node 1 cpus: 3 4 7 8 11 12 13 16 17 75 76 79 80 83 84 85 88 89
node 1 size: 193525 MB
node 1 free: 190298 MB
node 2 cpus: 18 19 20 23 24 27 28 32 33 90 91 92 95 96 99 100 104 105
node 2 size: 193525 MB

```

(Continued on next page)



SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrate2017_int_base = 452

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_peak = Not Run

CPU2017 License: 9017

Test Date: Apr-2019

Test Sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

Software Availability: Nov-2018

Platform Notes (Continued)

```

node 2 free: 193311 MB
node 3 cpus: 21 22 25 26 29 30 31 34 35 93 94 97 98 101 102 103 106 107
node 3 size: 193496 MB
node 3 free: 193307 MB
node 4 cpus: 36 37 38 41 42 45 46 50 51 108 109 110 113 114 117 118 122 123
node 4 size: 193525 MB
node 4 free: 193071 MB
node 5 cpus: 39 40 43 44 47 48 49 52 53 111 112 115 116 119 120 121 124 125
node 5 size: 193525 MB
node 5 free: 193339 MB
node 6 cpus: 54 55 56 59 60 63 64 68 69 126 127 128 131 132 135 136 140 141
node 6 size: 193525 MB
node 6 free: 193347 MB
node 7 cpus: 57 58 61 62 65 66 67 70 71 129 130 133 134 137 138 139 142 143
node 7 size: 193522 MB
node 7 free: 193340 MB
node distances:
node  0  1  2  3  4  5  6  7
  0: 10 11 21 21 21 21 21 21
  1: 11 10 21 21 21 21 21 21
  2: 21 21 10 11 21 21 21 21
  3: 21 21 11 10 21 21 21 21
  4: 21 21 21 21 10 11 21 21
  5: 21 21 21 21 11 10 21 21
  6: 21 21 21 21 21 21 10 11
  7: 21 21 21 21 21 21 11 10

```

```

From /proc/meminfo
MemTotal:      1584920420 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

```

```

From /etc/*release* /etc/*version*
os-release:
NAME="SLES"
VERSION="15"
VERSION_ID="15"
PRETTY_NAME="SUSE Linux Enterprise Server 15"
ID="sles"
ID_LIKE="suse"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:15"

```

```

uname -a:
Linux linux-ulb8 4.12.14-25.13-default #1 SMP Tue Aug 14 15:07:35 UTC 2018 (947aa51)
x86_64 x86_64 x86_64 GNU/Linux

```

(Continued on next page)



SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_base = 452

SPECrate2017_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: Nov-2018

Platform Notes (Continued)

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 28 08:46

SPEC is set to: /home/cpu2017-1.0.5-ic19.0u1
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 744G 23G 722G 3% /

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 -[PSE121I-1.50]- 03/01/2019
Memory:
48x NO DIMM NO DIMM
48x Samsung M393A4K40CB2-CVF 32 GB 2 rank 2933

(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)

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.

=====
CXXC 520.omnetpp_r(base) 523.xalancbmk_r(base) 531.deepsjeng_r(base)
541.leela_r(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 548.exchange2_r(base)

(Continued on next page)



SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrate2017_int_base = 452

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_peak = Not Run

CPU2017 License: 9017

Test Date: Apr-2019

Test Sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

Software Availability: Nov-2018

Compiler Version Notes (Continued)

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

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.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Base Optimization Flags

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

C++ benchmarks:

-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4

(Continued on next page)



SPEC CPU2017 Integer Rate Result

Copyright 2017-2019 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrate2017_int_base = 452

ThinkSystem SR950
(2.60 GHz, Intel Xeon Gold 6240Y)

SPECrate2017_int_peak = Not Run

CPU2017 License: 9017

Test Date: Apr-2019

Test Sponsor: Lenovo Global Technology

Hardware Availability: Apr-2019

Tested by: Lenovo Global Technology

Software Availability: Nov-2018

Base Optimization Flags (Continued)

C++ benchmarks (continued):

```
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64  
-lqkmallocc
```

Fortran benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte  
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64  
-lqkmallocc
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.html>

<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-CLX-D.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic18.0-official-linux64.2019-04-02.xml>

<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-CLX-D.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 2019-04-27 20:47:48-0400.

Report generated on 2019-08-21 12:09:02 by CPU2017 PDF formatter v6067.

Originally published on 2019-08-20.