



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

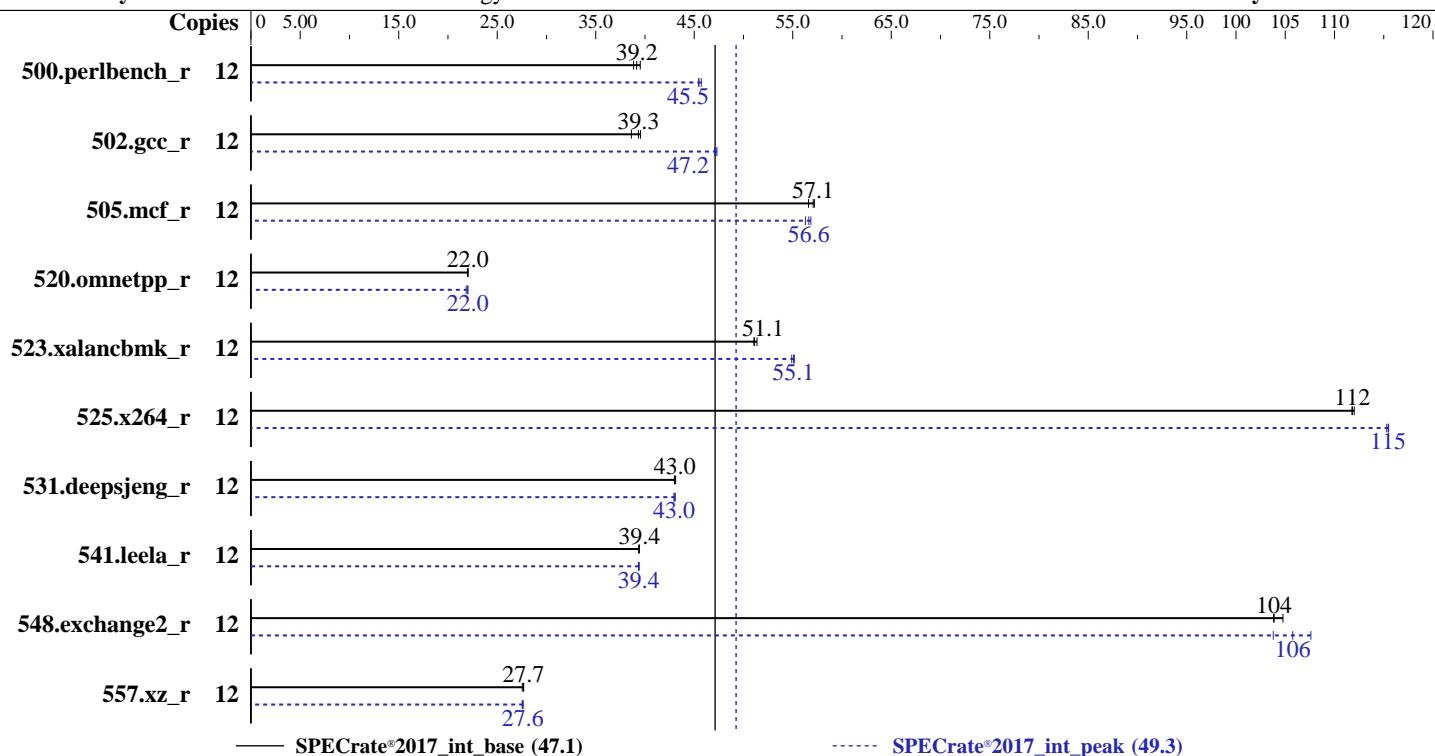
Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019



Hardware		Software	
CPU Name:	Intel Xeon E-2286G	OS:	Red Hat Enterprise Linux release 8.1 (Ootpa)
Max MHz:	4900		Kernel 4.18.0-147.el8.x86_64
Nominal:	4000	Compiler:	C/C++: Version 19.0.4.227 of Intel
Enabled:	6 cores, 1 chip, 2 threads/core		C/C++ Compiler for Linux;
Orderable:	1 chip		Fortran: Version 19.0.4.227 of
Cache L1:	32 KB I + 32 KB D on chip per core		Intel Fortran
L2:	256 KB I+D on chip per core		Compiler for Linux
L3:	12 MB I+D on chip per chip	Parallel:	No
Other:	None	Firmware:	Lenovo BIOS Version ITE107G released Dec-2019
Memory:	64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)	File System:	xfs
Storage:	1 x 960 GB SATA SSD	System State:	Run level 3 (multi-user)
Other:	None	Base Pointers:	64-bit
		Peak Pointers:	32/64-bit
		Other:	jemalloc memory allocator V5.0.1
		Power Management:	BIOS set to prefer performance at the cost of additional power usage



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	12	<b>488</b>	<b>39.2</b>	483	39.5	492	38.8	12	420	45.5	418	45.7	<b>420</b>	<b>45.5</b>
502.gcc_r	12	<b>432</b>	<b>39.3</b>	440	38.6	430	39.5	12	<b>360</b>	<b>47.2</b>	359	47.3	<b>361</b>	<b>47.1</b>
505.mcf_r	12	339	57.2	<b>340</b>	<b>57.1</b>	343	56.6	12	<b>342</b>	<b>56.6</b>	341	56.8	<b>344</b>	<b>56.3</b>
520.omnetpp_r	12	714	22.0	716	22.0	<b>715</b>	<b>22.0</b>	12	<b>715</b>	<b>22.0</b>	715	22.0	<b>721</b>	<b>21.8</b>
523.xalancbmk_r	12	248	51.1	247	51.4	<b>248</b>	<b>51.1</b>	12	<b>230</b>	<b>55.1</b>	230	55.2	<b>231</b>	<b>54.9</b>
525.x264_r	12	<b>188</b>	<b>112</b>	188	112	188	112	12	182	115	<b>182</b>	<b>115</b>	182	115
531.deepsjeng_r	12	320	43.0	319	43.1	<b>320</b>	<b>43.0</b>	12	319	43.1	<b>320</b>	<b>43.0</b>	320	42.9
541.leela_r	12	<b>504</b>	<b>39.4</b>	504	39.4	505	39.4	12	<b>505</b>	<b>39.4</b>	505	39.3	<b>504</b>	<b>39.4</b>
548.exchange2_r	12	303	104	<b>303</b>	<b>104</b>	300	105	12	<b>297</b>	<b>106</b>	303	104	<b>292</b>	<b>108</b>
557.xz_r	12	468	27.7	<b>469</b>	<b>27.7</b>	471	27.5	12	469	27.6	471	27.5	<b>470</b>	<b>27.6</b>

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

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"

## Environment Variables Notes

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

```
LD_LIBRARY_PATH =
  "/home/cpu2017-1.1.0-ic19.0u4/lib/intel64:/home/cpu2017-1.1.0-ic19.0u4/1
ib/ia32:/home/cpu2017-1.1.0-ic19.0u4/je5.0.1-32"
```

## General Notes

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.

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019

### General Notes (Continued)

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  
sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>

### Platform Notes

BIOS configuration:

ICE Performance Mode set 4HD Cooling Mode

Sysinfo program /home/cpu2017-1.1.0-ic19.0u4/bin/sysinfo  
Rev: r6365 of 2019-08-21 295195f888a3d7edb1e6e46a485a0011  
running on localhost.localdomain Thu Jan 9 17:07:40 2020

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-2286G CPU @ 4.00GHz  
1 "physical id"s (chips)  
12 "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 : 6  
siblings : 12  
physical 0: cores 0 1 2 3 4 5

From lscpu:

Architecture: x86\_64  
CPU op-mode(s): 32-bit, 64-bit  
Byte Order: Little Endian  
CPU(s): 12  
On-line CPU(s) list: 0-11  
Thread(s) per core: 2  
Core(s) per socket: 6  
Socket(s): 1  
NUMA node(s): 1  
Vendor ID: GenuineIntel

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019

## Platform Notes (Continued)

CPU family: 6  
Model: 158  
Model name: Intel(R) Xeon(R) E-2286G CPU @ 4.00GHz  
Stepping: 10  
CPU MHz: 4802.047  
CPU max MHz: 4900.0000  
CPU min MHz: 800.0000  
BogoMIPS: 8016.00  
Virtualization: VT-x  
L1d cache: 32K  
L1i cache: 32K  
L2 cache: 256K  
L3 cache: 12288K  
NUMA node0 CPU(s): 0-11  
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 aperfmpfperf tsc\_known\_freq pni pclmulqdq dtes64 monitor ds\_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid sse4\_1 sse4\_2 x2apic movbe popcnt tsc\_deadline\_timer aes xsave avx f16c rdrand lahf\_lm abm 3dnowprefetch cpuid\_fault epb invpcid\_single pt捷 ssbd ibrs ibpb stibp tpr\_shadow vnmi flexpriority ept vpid fsgsbase tsc\_adjust bmi1 hle avx2 smep bmi2 erms invpcid rtm mpx rdseed adx smap clflushopt intel\_pt xsaveopt xsavec xgetbv1 xsaves dtherm ida arat pln pts hwp hwp\_notify hwp\_act\_window hwp\_epp md\_clear flush\_l1d

/proc/cpuinfo cache data  
cache size : 12288 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 8 9 10 11  
node 0 size: 64253 MB  
node 0 free: 63545 MB  
node distances:  
node 0  
0: 10

From /proc/meminfo  
MemTotal: 65795764 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

From /etc/\*release\* /etc/\*version\*  
os-release:  
NAME="Red Hat Enterprise Linux"  
VERSION="8.1 (Ootpa)"

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019

## Platform Notes (Continued)

```
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="8.1"
PLATFORM_ID="platform:el8"
PRETTY_NAME="Red Hat Enterprise Linux 8.1 (Ootpa)"
ANSI_COLOR="0;31"
redhat-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
system-release: Red Hat Enterprise Linux release 8.1 (Ootpa)
system-release-cpe: cpe:/o:redhat:enterprise_linux:8.1:ga
```

```
uname -a:
Linux localhost.localdomain 4.18.0-147.el8.x86_64 #1 SMP Thu Sep 26 15:52:44 UTC 2019
x86_64 x86_64 x86_64 GNU/Linux
```

Kernel self-reported vulnerability status:

CVE-2018-3620 (L1 Terminal Fault):	Mitigation: PTE Inversion; VMX: conditional cache flushes, SMT vulnerable
Microarchitectural Data Sampling:	Mitigation: Clear CPU buffers; SMT vulnerable
CVE-2017-5754 (Meltdown):	Mitigation: PTI
CVE-2018-3639 (Speculative Store Bypass):	Mitigation: Speculative Store Bypass disabled via prctl and seccomp
CVE-2017-5753 (Spectre variant 1):	Mitigation: usercopy/swapgs barriers and __user pointer sanitization
CVE-2017-5715 (Spectre variant 2):	Mitigation: Full generic retpoline, IBPB: conditional, IBRS_FW, STIBP: conditional, RSB filling

run-level 3 Jan 9 17:04

```
SPEC is set to: /home/cpu2017-1.1.0-ic19.0u4
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdb3        xfs   812G  22G  791G   3% /home
```

```
From /sys/devices/virtual/dmi/id
BIOS:      LENOVO ITE107G 12/28/2019
Vendor:    LENOVO
Product:   INVALID
Product Family: Lenovo Product
Serial:    INVALID
```

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.

Memory:

```
4x SK Hynix HMA82GU7CJR8N-VK 16 GB 2 rank 2666
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019

## Platform Notes (Continued)

(End of data from sysinfo program)

### Compiler Version Notes

=====

C | 502.gcc\_r(peak)

=====

Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version  
19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====

C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(base, peak)

=====

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====

C | 502.gcc\_r(peak)

=====

Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version  
19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====

C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak)  
| 525.x264\_r(base, peak) 557.xz\_r(base, peak)

=====

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,  
Version 19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====

C++ | 523.xalancbmk\_r(peak)

=====

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version  
19.0.4.227 Build 20190416  
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.

=====

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019

## Compiler Version Notes (Continued)

```
=====
C++      | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base)
          | 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)
-----
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
-----
```

```
=====
C++      | 523.xalancbmk_r(peak)
-----
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
-----
```

```
=====
C++      | 520.omnetpp_r(base, peak) 523.xalancbmk_r(base)
          | 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)
-----
```

```
Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
-----
```

```
=====
Fortran | 548.exchange2_r(base, peak)
-----
```

```
Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R)
64, Version 19.0.4.227 Build 20190416
Copyright (C) 1985-2019 Intel Corporation. All rights reserved.
-----
```

## Base Compiler Invocation

C benchmarks:

icc -m64 -std=c11

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Jan-2020

Hardware Availability: Mar-2020

Software Availability: Nov-2019

## 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-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc
```

C++ benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc
```

Fortran benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc
```

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
icc -m64 -std=c11
```

```
502.gcc_r: icc -m32 -std=c11 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/ia32_lin
```

C++ benchmarks (except as noted below):

```
icpc -m64
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

CPU2017 License: 9017

Test Date: Jan-2020

Test Sponsor: Lenovo Global Technology

Hardware Availability: Mar-2020

Tested by: Lenovo Global Technology

Software Availability: Nov-2019

## Peak Compiler Invocation (Continued)

523.xalancbmk\_r: icpc -m32 -L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.4.227/linux/compiler/lib/ia32\_lin

Fortran benchmarks:

ifort -m64

## Peak Portability Flags

500.perlbench\_r: -DSPEC\_LP64 -DSPEC\_LINUX\_X64

502.gcc\_r: -D\_FILE\_OFFSET\_BITS=64

505.mcf\_r: -DSPEC\_LP64

520.omnetpp\_r: -DSPEC\_LP64

523.xalancbmk\_r: -D\_FILE\_OFFSET\_BITS=64 -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

## Peak Optimization Flags

C benchmarks:

500.perlbench\_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-fno-strict-overflow  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.4.227/linux/compiler/lib/intel64  
-lqkmalloc

502.gcc\_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo  
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4  
-L/usr/local/jet5.0.1-32/lib -ljemalloc

505.mcf\_r: -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.4.227/linux/compiler/lib/intel64  
-lqkmalloc

525.x264\_r: -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div  
-qopt-mem-layout-trans=4 -fno-alias  
-L/usr/local/IntelCompiler19/compilers\_and\_libraries\_2019.4.227/linux/compiler/lib/intel64  
-lqkmalloc

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2020 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem ST50  
(4.00 GHz, Intel Xeon E-2286G)

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

SPECrate®2017\_int\_base = 47.1

SPECrate®2017\_int\_peak = 49.3

Test Date: Jan-2020

Hardware Availability: Mar-2020

Software Availability: Nov-2019

## Peak Optimization Flags (Continued)

557.xz\_r: Same as 505.mcf\_r

C++ benchmarks:

```
520.omnetpp_r: -Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc
```

```
523.xalancbmk_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX2 -O3 -no-prec-div -qopt-mem-layout-trans=4
-L/usr/local/je5.0.1-32/lib -ljemalloc
```

531.deepsjeng\_r: Same as 520.omnetpp\_r

541.leela\_r: Same as 520.omnetpp\_r

Fortran benchmarks:

```
-Wl,-z,muldefs -xCORE-AVX2 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.4.227/linux/compiler/lib/intel64
-lqkmalloc
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0ul-official-linux64.2019-07-09.html>  
<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-CFL-B.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic19.0ul-official-linux64.2019-07-09.xml>  
<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-CFL-B.xml>

SPEC CPU and SPECrate are registered trademarks 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](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.0 on 2020-01-09 04:07:40-0500.

Report generated on 2020-02-11 10:03:26 by CPU2017 PDF formatter v6255.

Originally published on 2020-02-11.