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  
**Test Date:** Jan-2020  
**Hardware Availability:** Mar-2020  
**Software Availability:** Nov-2019

### Hardware

<table>
<thead>
<tr>
<th>Software</th>
<th>CPU Name: Intel Xeon E-2286G</th>
<th>Max MHz: 4900</th>
<th>Nominal: 4000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Enabled: 6 cores, 1 chip, 2 threads/core</td>
<td>Orderable: 1 chip</td>
<td>Cache L1: 32 KB I+ 32 KB D on chip per core</td>
</tr>
<tr>
<td></td>
<td>L2: 256 KB I+D on chip per core</td>
<td>L3: 12 MB I+D on chip per chip</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other: None</td>
<td>Memory: 64 GB (4 x 16 GB 2Rx8 PC4-2666V-E)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage: 1 x 960 GB SATA SSD</td>
<td>Other: None</td>
<td></td>
</tr>
</tbody>
</table>

**OS:** Red Hat Enterprise Linux release 8.1 (Ootpa)  
**Compiler:** C/C++: Version 19.0.4.227 of Intel C/C++  
**Compiler for Linux:** Intel Fortran  
**Firmware:** Lenovo BIOS Version ITE107G released Dec-2019  
**File System:** xfs  
**System State:** Run level 3 (multi-user)  
**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

### Software

<table>
<thead>
<tr>
<th>Software</th>
<th>SPECrate®2017_int_base = 47.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>SPECrate®2017_int_peak = 49.3</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td></td>
</tr>
<tr>
<td>505.mcf_r</td>
<td></td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td></td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td></td>
</tr>
<tr>
<td>525.x264_r</td>
<td></td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td></td>
</tr>
<tr>
<td>541.leela_r</td>
<td></td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td></td>
</tr>
<tr>
<td>557.xz_r</td>
<td></td>
</tr>
</tbody>
</table>

---

**Copies**

<table>
<thead>
<tr>
<th>Copies</th>
<th>SPECrate®2017_int_base (47.1)</th>
<th>SPECrate®2017_int_peak (49.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>12</td>
<td>39.2</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>12</td>
<td>39.3</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>12</td>
<td>47.2</td>
</tr>
<tr>
<td>520.omnetpp_r</td>
<td>12</td>
<td>22.0</td>
</tr>
<tr>
<td>523.xalancbmk_r</td>
<td>12</td>
<td>51.1</td>
</tr>
<tr>
<td>525.x264_r</td>
<td>12</td>
<td>35.1</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>12</td>
<td>43.0</td>
</tr>
<tr>
<td>541.leela_r</td>
<td>12</td>
<td>39.4</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>12</td>
<td>27.7</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>12</td>
<td>27.6</td>
</tr>
</tbody>
</table>
## Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench</td>
<td>12</td>
<td>488</td>
<td>39.2</td>
<td>483</td>
<td>39.5</td>
<td>492</td>
<td>38.8</td>
<td>420</td>
<td>45.5</td>
<td>418</td>
<td>45.7</td>
<td>420</td>
<td>45.5</td>
</tr>
<tr>
<td>502.gcc</td>
<td>12</td>
<td>432</td>
<td>39.3</td>
<td>440</td>
<td>38.6</td>
<td>430</td>
<td>39.5</td>
<td>360</td>
<td>47.2</td>
<td>359</td>
<td>47.3</td>
<td>361</td>
<td>47.1</td>
</tr>
<tr>
<td>505.mcf</td>
<td>12</td>
<td>339</td>
<td>57.2</td>
<td>340</td>
<td>57.1</td>
<td>343</td>
<td>56.6</td>
<td>342</td>
<td>56.6</td>
<td>341</td>
<td>56.8</td>
<td>344</td>
<td>56.3</td>
</tr>
<tr>
<td>520.omnetpp</td>
<td>12</td>
<td>714</td>
<td>22.0</td>
<td>716</td>
<td>22.0</td>
<td>715</td>
<td>22.0</td>
<td>715</td>
<td>22.0</td>
<td>715</td>
<td>22.0</td>
<td>721</td>
<td>21.8</td>
</tr>
<tr>
<td>523.xalancbmk</td>
<td>12</td>
<td>248</td>
<td>51.1</td>
<td>247</td>
<td>51.4</td>
<td>248</td>
<td>51.1</td>
<td>230</td>
<td>55.1</td>
<td>230</td>
<td>55.2</td>
<td>231</td>
<td>54.9</td>
</tr>
<tr>
<td>525.x264</td>
<td>12</td>
<td>188</td>
<td>112</td>
<td>188</td>
<td>112</td>
<td>188</td>
<td>112</td>
<td>182</td>
<td>115</td>
<td>182</td>
<td>115</td>
<td>182</td>
<td>115</td>
</tr>
<tr>
<td>531.deepsjeng</td>
<td>12</td>
<td>320</td>
<td>43.0</td>
<td>319</td>
<td>43.1</td>
<td>320</td>
<td>43.0</td>
<td>320</td>
<td>43.0</td>
<td>320</td>
<td>42.9</td>
<td>320</td>
<td>43.0</td>
</tr>
<tr>
<td>541.leela</td>
<td>12</td>
<td>504</td>
<td>39.4</td>
<td>504</td>
<td>39.4</td>
<td>505</td>
<td>39.4</td>
<td>505</td>
<td>39.4</td>
<td>505</td>
<td>39.3</td>
<td>504</td>
<td>39.4</td>
</tr>
<tr>
<td>548.exchange2</td>
<td>12</td>
<td>303</td>
<td>104</td>
<td>303</td>
<td>104</td>
<td>300</td>
<td>105</td>
<td>297</td>
<td>106</td>
<td>303</td>
<td>104</td>
<td>292</td>
<td>108</td>
</tr>
<tr>
<td>557.xz</td>
<td>12</td>
<td>468</td>
<td>27.7</td>
<td>469</td>
<td>27.7</td>
<td>471</td>
<td>27.5</td>
<td>469</td>
<td>27.6</td>
<td>471</td>
<td>27.5</td>
<td>470</td>
<td>27.6</td>
</tr>
</tbody>
</table>

---

### 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/lib/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.
## Lenovo Global Technology

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

### SPEC CPU®2017 Integer Rate Result

<table>
<thead>
<tr>
<th>SPECrate®2017_int_base</th>
<th>SPECrate®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>47.1</td>
<td>49.3</td>
</tr>
</tbody>
</table>

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

### 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.


### 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 295195f888a3d7edbe6e46a485a0011  
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)
Lenovo Global Technology
ThinkSystem ST50
(4.00 GHz, Intel Xeon E-2286G)

SPECrater®2017_int_base = 47.1
SPECrater®2017_int_peak = 49.3

CPU2017 License: 9017
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
- /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)
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
Files system 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)
LENNOVO 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

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)
Lenovo Global Technology

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

SPECrate®2017_int_base = 47.1
SPECrate®2017_int_peak = 49.3

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
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


C++ benchmarks (except as noted below):
icpc -m64

(Continued on next page)
Lenovo Global Technology
ThinkSystem ST50
(4.00 GHz, Intel Xeon E-2286G)

<table>
<thead>
<tr>
<th>CPU2017 License</th>
<th>Lenovo Global Technology</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>
</tbody>
</table>

SPECrates

- SPECrate®2017_int_base = 47.1
- SPECrate®2017_int_peak = 49.3

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/je5.0.1-32/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)
Lenovo Global Technology
ThinkSystem ST50
(4.00 GHz, Intel Xeon E-2286G)

SPEC CPU®2017 Integer Rate Result
Copyright 2017-2020 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrates®2017_int_base = 47.1
SPECrates®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

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/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/Lenovo-Platform-SPECcpu2017-Flags-V1.2-CFL-B.xml

SPEC CPU and SPECrates 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.

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.