



# SPEC® CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

CPU2017 License: 9017

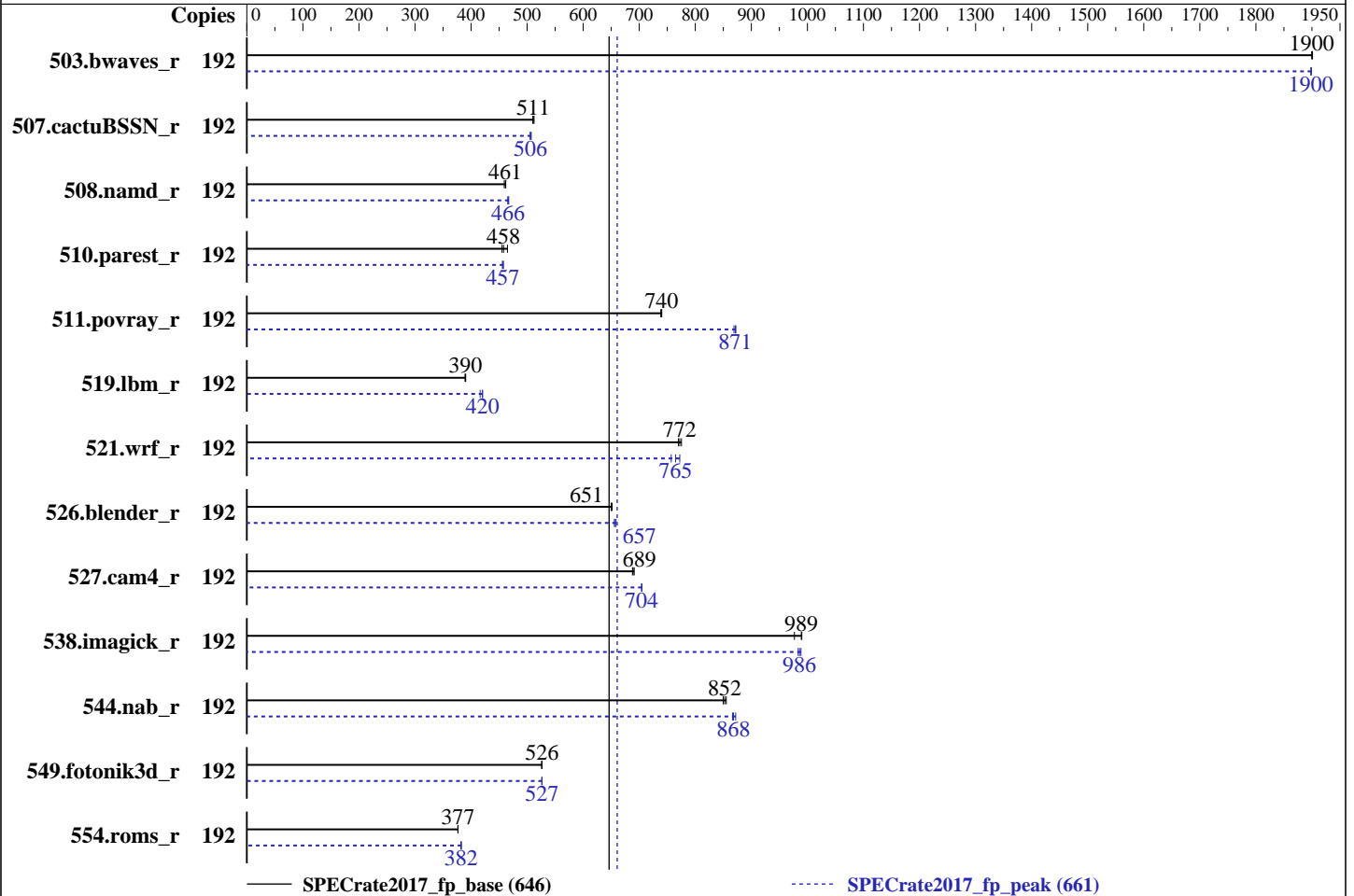
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Jan-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017



### Hardware

CPU Name: Intel Xeon Platinum 8158  
 Max MHz.: 3700  
 Nominal: 3000  
 Enabled: 96 cores, 8 chips, 2 threads/core  
 Orderable: 2,4,8 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: 3 TB (96 x 32 GB 2Rx4 PC4-2666V-R)  
 Storage: 800 GB tmpfs  
 Other: None

### Software

OS: SUSE Linux Enterprise Server 12 SP2 (x86\_64)  
 Kernel 4.4.21-69-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 Compiler for Linux  
 Parallel: No  
 Firmware: Lenovo BIOS Version PSE105X 1.00 released Aug-2017  
 File System: tmpfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 Other: None



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

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

Test Date: Jan-2018  
Hardware Availability: Sep-2017  
Software Availability: Sep-2017

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	192	<b><u>1013</u></b>	<b><u>1900</u></b>	1014	1900	1013	1900	192	1014	1900	<b><u>1014</u></b>	<b><u>1900</u></b>	1014	1900
507.cactuBSSN_r	192	<b><u>476</u></b>	<b><u>511</u></b>	474	512	476	510	192	479	507	<b><u>480</u></b>	<b><u>506</u></b>	481	505
508.namd_r	192	<b><u>395</u></b>	<b><u>461</u></b>	395	462	397	459	192	<b><u>391</u></b>	<b><u>466</u></b>	390	467	392	466
510.parest_r	192	1080	465	<b><u>1097</u></b>	<b><u>458</u></b>	1103	455	192	1097	458	<b><u>1099</u></b>	<b><u>457</u></b>	1102	456
511.povray_r	192	606	740	607	738	<b><u>606</u></b>	<b><u>740</u></b>	192	<b><u>515</u></b>	<b><u>871</u></b>	514	872	516	869
519.lbm_r	192	<b><u>519</u></b>	<b><u>390</u></b>	520	389	518	390	192	<b><u>481</u></b>	<b><u>420</u></b>	481	420	486	416
521.wrf_r	192	<b><u>557</u></b>	<b><u>772</u></b>	555	775	559	770	192	568	757	<b><u>562</u></b>	<b><u>765</u></b>	557	772
526.blender_r	192	<b><u>449</u></b>	<b><u>651</u></b>	450	650	449	652	192	446	656	<b><u>445</u></b>	<b><u>657</u></b>	444	659
527.cam4_r	192	486	691	<b><u>487</u></b>	<b><u>689</u></b>	488	688	192	477	704	477	705	<b><u>477</u></b>	<b><u>704</u></b>
538.imagick_r	192	<b><u>483</u></b>	<b><u>989</u></b>	489	977	482	990	192	486	983	<b><u>484</u></b>	<b><u>986</u></b>	483	989
544.nab_r	192	380	850	378	855	<b><u>379</u></b>	<b><u>852</u></b>	192	371	872	373	866	<b><u>372</u></b>	<b><u>868</u></b>
549.fotonik3d_r	192	1421	527	1423	526	<b><u>1421</u></b>	<b><u>526</u></b>	192	1421	527	<b><u>1421</u></b>	<b><u>527</u></b>	1422	526
554.roms_r	192	809	377	<b><u>810</u></b>	<b><u>377</u></b>	810	376	192	799	382	<b><u>798</u></b>	<b><u>382</u></b>	797	383

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

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"  
Tmpfs filesystem can be set with:  
mount -t tmpfs -o size=800g tmpfs /home  
Process tuning setting:  
echo 50000 > /proc/sys/kernel/sched\_cfs\_bandwidth\_slice\_us  
echo 240000000 > /proc/sys/kernel/sched\_latency\_ns  
echo 5000000 > /proc/sys/kernel/sched\_migration\_cost\_ns  
echo 100000000 > /proc/sys/kernel/sched\_min\_granularity\_ns  
echo 150000000 > /proc/sys/kernel/sched\_wakeup\_granularity\_ns

## 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"  
Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM  
memory using Redhat Enterprise Linux 7.4

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jan-2018

**Hardware Availability:** Sep-2017

**Software Availability:** Sep-2017

### General Notes (Continued)

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>

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 generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, <http://www.spec.org/osg/policy.html>

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

SNC set to Enable

Hardware Prefetcher set to Disable

DCU Streamer Prefetcher set to Disable

MONITORMWAIT set to Enable

Execute Disable Bit set to Disable

Trusted Execution Technology set to Enable

Per Core Pstate set to Disable

XPT Prefetcher set to Enable

Stale AtoS set to Enable

LLC Deadline Alloc set to Enable

Sysinfo program /home/cpu2017.1.0.2.ic18.0/bin/sysinfo

Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f

running on linux-boxi Mon Jan 8 18:33:57 2018

SUT (System Under Test) info as seen by some common utilities.

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECrate2017\_fp\_base = 646

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_peak = 661

CPU2017 License: 9017

Test Date: Jan-2018

Test Sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Sep-2017

### Platform Notes (Continued)

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) Platinum 8158 CPU @ 3.00GHz
 8 "physical id"s (chips)
192 "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      : 12
siblings       : 24
physical 0:    : cores 0 1 2 3 4 8 9 11 17 18 19 20
physical 1:    : cores 0 1 2 3 4 9 10 16 18 19 25 26
physical 2:    : cores 0 1 2 3 4 9 10 16 18 19 25 26
physical 3:    : cores 0 1 2 3 4 8 9 11 17 18 19 20
physical 4:    : cores 0 1 2 3 10 17 18 19 24 25 26 27
physical 5:    : cores 0 1 2 3 4 9 10 16 18 19 25 26
physical 6:    : cores 0 1 2 3 4 9 10 16 18 19 25 26
physical 7:    : cores 0 3 4 5 6 7 16 18 19 20 21 22

```

From lscpu:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:            Little Endian
CPU(s):                192
On-line CPU(s) list:  0-191
Thread(s) per core:    2
Core(s) per socket:    12
Socket(s):             8
NUMA node(s):         16
Vendor ID:             GenuineIntel
CPU family:            6
Model:                85
Model name:           Intel(R) Xeon(R) Platinum 8158 CPU @ 3.00GHz
Stepping:             4
CPU MHz:              2992.979
BogoMIPS:             5985.95
Virtualization:       VT-x
L1d cache:            32K
L1i cache:            32K
L2 cache:             1024K
L3 cache:             25344K
NUMA node0 CPU(s):    0-2,5,6,8,96-98,101,102,104
NUMA node1 CPU(s):    3,4,7,9-11,99,100,103,105-107
NUMA node2 CPU(s):    12-14,17,19,22,108-110,113,115,118
NUMA node3 CPU(s):    15,16,18,20,21,23,111,112,114,116,117,119
NUMA node4 CPU(s):    24-26,29,31,34,120-122,125,127,130

```

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Jan-2018

Hardware Availability: Sep-2017

Software Availability: Sep-2017

### Platform Notes (Continued)

```

NUMA node5 CPU(s): 27,28,30,32,33,35,123,124,126,128,129,131
NUMA node6 CPU(s): 36-38,41,42,44,132-134,137,138,140
NUMA node7 CPU(s): 39,40,43,45-47,135,136,139,141-143
NUMA node8 CPU(s): 48-50,53,56,57,144-146,149,152,153
NUMA node9 CPU(s): 51,52,54,55,58,59,147,148,150,151,154,155
NUMA node10 CPU(s): 60-62,65,67,70,156-158,161,163,166
NUMA node11 CPU(s): 63,64,66,68,69,71,159,160,162,164,165,167
NUMA node12 CPU(s): 72-74,77,79,82,168-170,173,175,178
NUMA node13 CPU(s): 75,76,78,80,81,83,171,172,174,176,177,179
NUMA node14 CPU(s): 84-86,90-92,180-182,186-188
NUMA node15 CPU(s): 87-89,93-95,183-185,189-191

```

```

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
aperfperf 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 f16c rdrand lahf_lm abm 3dnowprefetch ida arat epb pln pts dtherm intel_pt
tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2
erms invpcid rtm cqm mpx avx512f avx512dq rdseed adx smap clflushopt clwb avx512cd
avx512bw avx512vl xsaveopt xsavec xgetbv1 cqm_llc cqm_occup_llc

```

```

/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: 16 nodes (0-15)
node 0 cpus: 0 1 2 5 6 8 96 97 98 101 102 104
node 0 size: 192984 MB
node 0 free: 192457 MB
node 1 cpus: 3 4 7 9 10 11 99 100 103 105 106 107
node 1 size: 193528 MB
node 1 free: 193016 MB
node 2 cpus: 12 13 14 17 19 22 108 109 110 113 115 118
node 2 size: 193528 MB
node 2 free: 193053 MB
node 3 cpus: 15 16 18 20 21 23 111 112 114 116 117 119
node 3 size: 193528 MB
node 3 free: 187879 MB
node 4 cpus: 24 25 26 29 31 34 120 121 122 125 127 130
node 4 size: 193528 MB
node 4 free: 193046 MB
node 5 cpus: 27 28 30 32 33 35 123 124 126 128 129 131
node 5 size: 193528 MB
node 5 free: 184568 MB
node 6 cpus: 36 37 38 41 42 44 132 133 134 137 138 140
node 6 size: 193528 MB

```

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECrate2017\_fp\_base = 646

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_peak = 661

CPU2017 License: 9017

Test Date: Jan-2018

Test Sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Sep-2017

### Platform Notes (Continued)

```

node 6 free: 193047 MB
node 7 cpus: 39 40 43 45 46 47 135 136 139 141 142 143
node 7 size: 193528 MB
node 7 free: 193048 MB
node 8 cpus: 48 49 50 53 56 57 144 145 146 149 152 153
node 8 size: 193528 MB
node 8 free: 193046 MB
node 9 cpus: 51 52 54 55 58 59 147 148 150 151 154 155
node 9 size: 193528 MB
node 9 free: 193022 MB
node 10 cpus: 60 61 62 65 67 70 156 157 158 161 163 166
node 10 size: 193528 MB
node 10 free: 193054 MB
node 11 cpus: 63 64 66 68 69 71 159 160 162 164 165 167
node 11 size: 193528 MB
node 11 free: 193061 MB
node 12 cpus: 72 73 74 77 79 82 168 169 170 173 175 178
node 12 size: 193528 MB
node 12 free: 193057 MB
node 13 cpus: 75 76 78 80 81 83 171 172 174 176 177 179
node 13 size: 193528 MB
node 13 free: 193047 MB
node 14 cpus: 84 85 86 90 91 92 180 181 182 186 187 188
node 14 size: 193528 MB
node 14 free: 193041 MB
node 15 cpus: 87 88 89 93 94 95 183 184 185 189 190 191
node 15 size: 193523 MB
node 15 free: 193051 MB
node distances:
node  0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
 0: 10 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20
 1: 20 10 20 20 20 20 20 20 20 20 20 20 20 20 20 20
 2: 20 20 10 20 20 20 20 20 20 20 20 20 20 20 20 20
 3: 20 20 20 10 20 20 20 20 20 20 20 20 20 20 20 20
 4: 20 20 20 20 10 20 20 20 20 20 20 20 20 20 20 20
 5: 20 20 20 20 20 10 20 20 20 20 20 20 20 20 20 20
 6: 20 20 20 20 20 20 10 20 20 20 20 20 20 20 20 20
 7: 20 20 20 20 20 20 20 10 20 20 20 20 20 20 20 20
 8: 20 20 20 20 20 20 20 20 10 20 20 20 20 20 20 20
 9: 20 20 20 20 20 20 20 20 20 10 20 20 20 20 20 20
10: 20 20 20 20 20 20 20 20 20 20 10 20 20 20 20 20
11: 20 20 20 20 20 20 20 20 20 20 20 10 20 20 20 20
12: 20 20 20 20 20 20 20 20 20 20 20 20 10 20 20 20
13: 20 20 20 20 20 20 20 20 20 20 20 20 20 10 20 20
14: 20 20 20 20 20 20 20 20 20 20 20 20 20 20 10 20
15: 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 10

```

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

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

**Test Date:** Jan-2018  
**Hardware Availability:** Sep-2017  
**Software Availability:** Sep-2017

### Platform Notes (Continued)

```

From /proc/meminfo
MemTotal:      3170207908 kB
HugePages_Total:      0
Hugepagesize:    2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
SUSE Linux Enterprise Server 12 (x86_64)
VERSION = 12
PATCHLEVEL = 2
# 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-SP2"
VERSION_ID="12.2"
PRETTY_NAME="SUSE Linux Enterprise Server 12 SP2"
ID="sles"
ANSI_COLOR="0;32"
CPE_NAME="cpe:/o:suse:sles:12:sp2"

uname -a:
Linux linux-boxi 4.4.21-69-default #1 SMP Tue Oct 25 10:58:20 UTC 2016 (9464f67)
x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Jan 8 17:44

SPEC is set to: /home/cpu2017.1.0.2.ic18.0
Filesystem      Type      Size  Used Avail Use% Mounted on
tmpfs           tmpfs    800G   11G  790G   2% /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 -[PSE105X-1.00]- 08/17/2017
Memory:
96x Samsung M393A4K40BB2-CTD 32 GB 2 rank 2666

(End of data from sysinfo program)

```

### Compiler Version Notes

```

=====
CC 519.lbm_r(base) 538.imagick_r(base, peak) 544.nab_r(base)
=====

```

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jan-2018

**Hardware Availability:** Sep-2017

**Software Availability:** Sep-2017

## Compiler Version Notes (Continued)

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

=====  
CC 519.lbm\_r(peak) 544.nab\_r(peak)

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

=====  
CXXC 508.namd\_r(base) 510.parest\_r(base)

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

=====  
CXXC 508.namd\_r(peak) 510.parest\_r(peak)

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

=====  
CC 511.povray\_r(base) 526.blender\_r(base)

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

=====  
CC 511.povray\_r(peak) 526.blender\_r(peak)

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

=====  
FC 507.cactuBSSN\_r(base)

=====  
icpc (ICC) 18.0.0 20170811

(Continued on next page)





# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

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

**Test Date:** Jan-2018  
**Hardware Availability:** Sep-2017  
**Software Availability:** Sep-2017

## Compiler Version Notes (Continued)

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

=====  
FC 507.cactuBSSN\_r(peak)  
=====

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

=====  
FC 503.bwaves\_r(base, peak) 549.fotonik3d\_r(base, peak) 554.roms\_r(base)  
=====

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

=====  
FC 554.roms\_r(peak)  
=====

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

=====  
CC 521.wrf\_r(base) 527.cam4\_r(base)  
=====

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

=====  
CC 521.wrf\_r(peak) 527.cam4\_r(peak)  
=====

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

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jan-2018

**Hardware Availability:** Sep-2017

**Software Availability:** Sep-2017

## Compiler Version Notes (Continued)

Copyright (C) 1985-2017 Intel Corporation. All rights reserved.  
-----

## Base Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

ifort icc

Benchmarks using both C and C++:

icpc icc

Benchmarks using Fortran, C, and C++:

icpc icc ifort

## Base Portability Flags

503.bwaves\_r: -DSPEC\_LP64

507.cactuBSSN\_r: -DSPEC\_LP64

508.namd\_r: -DSPEC\_LP64

510.parest\_r: -DSPEC\_LP64

511.povray\_r: -DSPEC\_LP64

519.lbm\_r: -DSPEC\_LP64

521.wrf\_r: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG -convert big\_endian

526.blender\_r: -DSPEC\_LP64 -DSPEC\_LINUX -funsigned-char

527.cam4\_r: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG

538.imagick\_r: -DSPEC\_LP64

544.nab\_r: -DSPEC\_LP64

549.fotonik3d\_r: -DSPEC\_LP64

554.roms\_r: -DSPEC\_LP64



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jan-2018

**Hardware Availability:** Sep-2017

**Software Availability:** Sep-2017

## Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3

Fortran benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

Benchmarks using both Fortran and C:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

Benchmarks using both C and C++:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:

-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

## Base Other Flags

C benchmarks:

-m64 -std=c11

C++ benchmarks:

-m64

Fortran benchmarks:

-m64

Benchmarks using both Fortran and C:

-m64 -std=c11

Benchmarks using both C and C++:

-m64 -std=c11

Benchmarks using Fortran, C, and C++:

-m64 -std=c11



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jan-2018

**Hardware Availability:** Sep-2017

**Software Availability:** Sep-2017

## Peak Compiler Invocation

C benchmarks:

icc

C++ benchmarks:

icpc

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

ifort icc

Benchmarks using both C and C++:

icpc icc

Benchmarks using Fortran, C, and C++:

icpc icc ifort

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

519.lbm\_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3

538.imagick\_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-ffinite-math-only -qopt-mem-layout-trans=3

544.nab\_r: Same as 519.lbm\_r

C++ benchmarks:

-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3

Fortran benchmarks:

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECrate2017\_fp\_base = 646

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_peak = 661

CPU2017 License: 9017

Test Date: Jan-2018

Test Sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: Sep-2017

## Peak Optimization Flags (Continued)

503.bwaves\_r: -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch  
-ffinite-math-only -qopt-mem-layout-trans=3  
-nostandard-realloc-lhs -align array32byte

549.fotonik3d\_r: Same as 503.bwaves\_r

554.roms\_r: -prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs  
-align array32byte

Benchmarks using both Fortran and C:

-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

Benchmarks using both C and C++:

-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3

Benchmarks using Fortran, C, and C++:

-prof-gen(pass 1) -prof-use(pass 2) -ipo -xCORE-AVX2 -O3  
-no-prec-div -qopt-prefetch -ffinite-math-only  
-qopt-mem-layout-trans=3 -nostandard-realloc-lhs -align array32byte

## Peak Other Flags

C benchmarks:

-m64 -std=c11

C++ benchmarks:

-m64

Fortran benchmarks:

-m64

Benchmarks using both Fortran and C:

-m64 -std=c11

Benchmarks using both C and C++:

-m64 -std=c11

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR950  
(3.00 GHz, Intel Xeon Platinum 8158)

SPECrate2017\_fp\_base = 646

SPECrate2017\_fp\_peak = 661

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jan-2018

**Hardware Availability:** Sep-2017

**Software Availability:** Sep-2017

## Peak Other Flags (Continued)

Benchmarks using Fortran, C, and C++:

-m64 -std=c11

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/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-A.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/Lenovo-Platform-SPECcpu2017-Flags-V1.2-SKL-A.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](mailto:info@spec.org).

Tested with SPEC CPU2017 v1.0.2 on 2018-01-08 05:33:56-0500.

Report generated on 2018-10-31 16:54:50 by CPU2017 PDF formatter v6067.

Originally published on 2018-03-06.