



# SPEC® CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

CPU2017 License: 9017

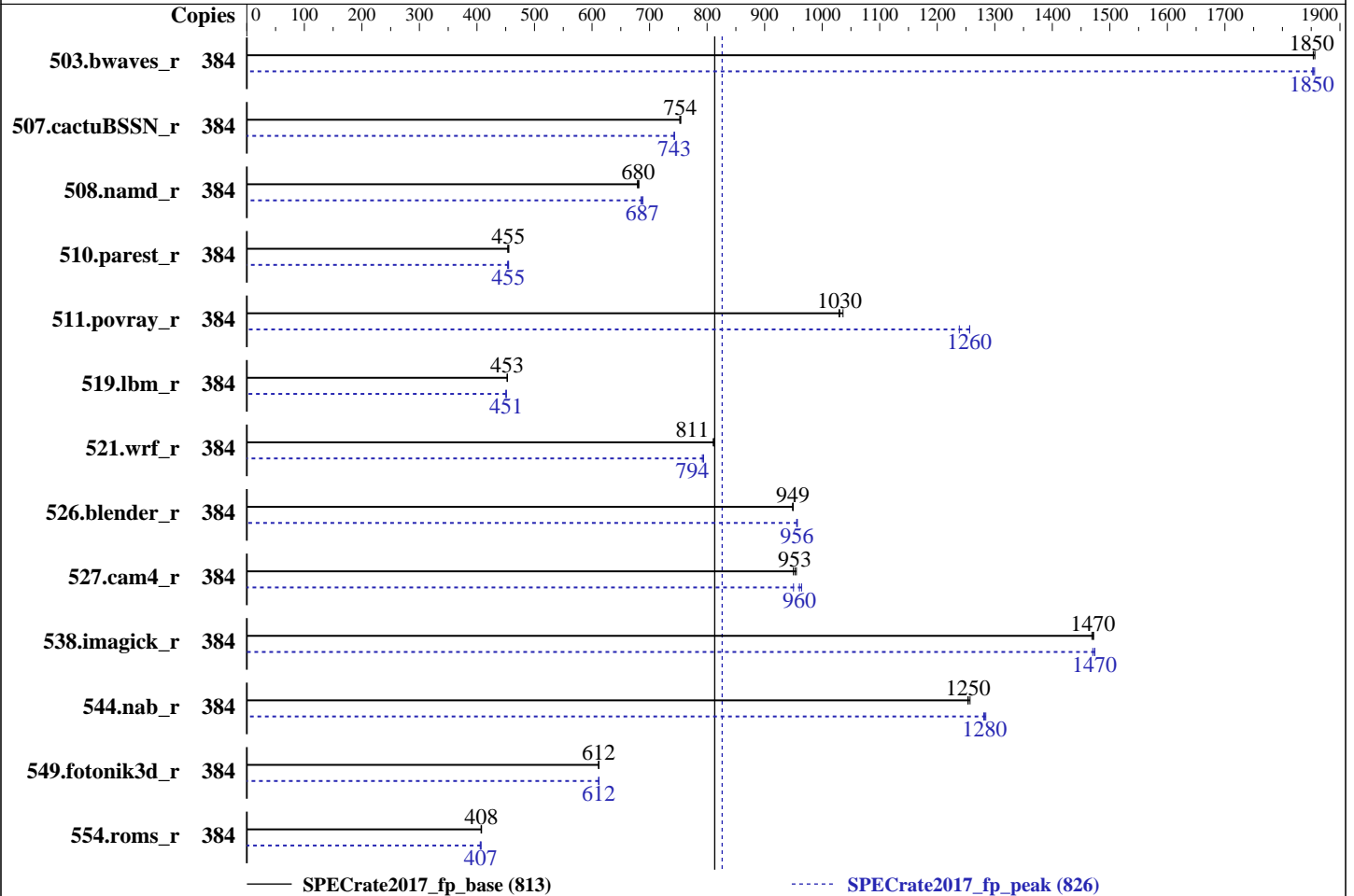
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Jul-2018

Hardware Availability: Sep-2017

Software Availability: May-2018



### Hardware

CPU Name: Intel Xeon Platinum 8160  
 Max MHz.: 3700  
 Nominal: 2100  
 Enabled: 192 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: 33 MB I+D on chip per chip  
 Other: None  
 Memory: 3 TB (96 x 32 GB 2Rx4 PC4-2666V-R)  
 Storage: 1 x 800 GB SAS SSD  
 Other: None

### Software

OS: SUSE Linux Enterprise Server 12 SP2 (x86\_64)  
 Kernel 4.4.121-92.80-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 PSE113P 1.30 released Jun-2018  
 File System: xfs  
 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  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

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

Test Date: Jul-2018  
Hardware Availability: Sep-2017  
Software Availability: May-2018

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	384	<b>2077</b>	<b>1850</b>	2074	1860	2078	1850	384	<b>2078</b>	<b>1850</b>	2075	1860	2079	1850
507.cactuBSSN_r	384	644	754	646	753	<b>645</b>	<b>754</b>	384	654	743	<b>654</b>	<b>743</b>	654	743
508.namd_r	384	537	679	<b>536</b>	<b>680</b>	535	682	384	532	685	530	688	<b>531</b>	<b>687</b>
510.parest_r	384	2206	455	<b>2208</b>	<b>455</b>	2216	453	384	<b>2210</b>	<b>455</b>	2207	455	2216	453
511.povray_r	384	865	1040	871	1030	<b>870</b>	<b>1030</b>	384	724	1240	714	1260	<b>714</b>	<b>1260</b>
519.lbm_r	384	893	453	<b>894</b>	<b>453</b>	895	452	384	898	451	<b>898</b>	<b>451</b>	898	451
521.wrf_r	384	<b>1060</b>	<b>811</b>	1059	813	1061	811	384	1084	794	1086	792	<b>1084</b>	<b>794</b>
526.blender_r	384	<b>616</b>	<b>949</b>	617	949	616	950	384	<b>612</b>	<b>956</b>	611	957	612	956
527.cam4_r	384	703	955	707	950	<b>705</b>	<b>953</b>	384	<b>699</b>	<b>960</b>	697	964	707	950
538.imagick_r	384	650	1470	<b>649</b>	<b>1470</b>	649	1470	384	650	1470	<b>648</b>	<b>1470</b>	648	1470
544.nab_r	384	516	1250	514	1260	<b>515</b>	<b>1250</b>	384	503	1280	505	1280	<b>504</b>	<b>1280</b>
549.fotonik3d_r	384	<b>2447</b>	<b>612</b>	2446	612	2448	611	384	2445	612	2447	612	<b>2446</b>	<b>612</b>
554.roms_r	384	<b>1497</b>	<b>408</b>	1499	407	1495	408	384	1499	407	1504	406	<b>1500</b>	<b>407</b>

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

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/cpu2017.1.0.2.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 lx Intel Core i7-4790 CPU + 32GB RAM  
memory using Redhat Enterprise Linux 7.4  
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>

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 CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

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

**Test Date:** Jul-2018  
**Hardware Availability:** Sep-2017  
**Software Availability:** May-2018

### 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.

### 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

Execute Disable Bit set to Disable

Trusted Execution Technology set to Enable

Stale A to S set to Enable

LLC dead line 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-s8se Fri Jul 27 16:22:50 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) Platinum 8160 CPU @ 2.10GHz

8 "physical id"s (chips)

384 "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 : 24

siblings : 48

physical 0: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 1: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 2: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 3: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 4: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 5: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 6: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

physical 7: cores 0 1 2 3 4 5 8 9 10 11 12 13 16 17 18 19 20 21 24 25 26 27 28 29

From lscpu:

Architecture: x86\_64

CPU op-mode(s): 32-bit, 64-bit

Byte Order: Little Endian

CPU(s): 384

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECrate2017\_fp\_base = 813

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_peak = 826

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

**Test Date:** Jul-2018  
**Hardware Availability:** Sep-2017  
**Software Availability:** May-2018

### Platform Notes (Continued)

```

On-line CPU(s) list:    0-383
Thread(s) per core:    2
Core(s) per socket:    24
Socket(s):              8
NUMA node(s):          16
Vendor ID:              GenuineIntel
CPU family:             6
Model:                  85
Model name:             Intel(R) Xeon(R) Platinum 8160 CPU @ 2.10GHz
Stepping:               4
CPU MHz:                2095.067
BogoMIPS:               4190.13
Virtualization:         VT-x
L1d cache:              32K
L1i cache:              32K
L2 cache:               1024K
L3 cache:               33792K
NUMA node0 CPU(s):     0-2,6-8,12-14,18-20,192-194,198-200,204-206,210-212
NUMA node1 CPU(s):     3-5,9-11,15-17,21-23,195-197,201-203,207-209,213-215
NUMA node2 CPU(s):     24-26,30-32,36-38,42-44,216-218,222-224,228-230,234-236
NUMA node3 CPU(s):     27-29,33-35,39-41,45-47,219-221,225-227,231-233,237-239
NUMA node4 CPU(s):     48-50,54-56,60-62,66-68,240-242,246-248,252-254,258-260
NUMA node5 CPU(s):     51-53,57-59,63-65,69-71,243-245,249-251,255-257,261-263
NUMA node6 CPU(s):     72-74,78-80,84-86,90-92,264-266,270-272,276-278,282-284
NUMA node7 CPU(s):     75-77,81-83,87-89,93-95,267-269,273-275,279-281,285-287
NUMA node8 CPU(s):     96-98,102-104,108-110,114-116,288-290,294-296,300-302,306-308
NUMA node9 CPU(s):     99-101,105-107,111-113,117-119,291-293,297-299,303-305,309-311
NUMA node10 CPU(s):    120-122,126-128,132-134,138-140,312-314,318-320,324-326,330-332
NUMA node11 CPU(s):    123-125,129-131,135-137,141-143,315-317,321-323,327-329,333-335
NUMA node12 CPU(s):    144-146,150-152,156-158,162-164,336-338,342-344,348-350,354-356
NUMA node13 CPU(s):    147-149,153-155,159-161,165-167,339-341,345-347,351-353,357-359
NUMA node14 CPU(s):    168-170,174-176,180-182,186-188,360-362,366-368,372-374,378-380
NUMA node15 CPU(s):    171-173,177-179,183-185,189-191,363-365,369-371,375-377,381-383
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 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 invpcid_single pln pts dtherm
intel_pt rsb_ctxsw spec_ctrl stibp ssbd retpoline kaiser tpr_shadow vnmi

```

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Jul-2018

Hardware Availability: Sep-2017

Software Availability: May-2018

### Platform Notes (Continued)

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 : 33792 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 6 7 8 12 13 14 18 19 20 192 193 194 198 199 200 204 205 206 210 211 212
node 0 size: 192983 MB
node 0 free: 190656 MB
node 1 cpus: 3 4 5 9 10 11 15 16 17 21 22 23 195 196 197 201 202 203 207 208 209 213 214 215
node 1 size: 193527 MB
node 1 free: 188666 MB
node 2 cpus: 24 25 26 30 31 32 36 37 38 42 43 44 216 217 218 222 223 224 228 229 230 234 235 236
node 2 size: 193527 MB
node 2 free: 188476 MB
node 3 cpus: 27 28 29 33 34 35 39 40 41 45 46 47 219 220 221 225 226 227 231 232 233 237 238 239
node 3 size: 193527 MB
node 3 free: 191396 MB
node 4 cpus: 48 49 50 54 55 56 60 61 62 66 67 68 240 241 242 246 247 248 252 253 254 258 259 260
node 4 size: 193527 MB
node 4 free: 191405 MB
node 5 cpus: 51 52 53 57 58 59 63 64 65 69 70 71 243 244 245 249 250 251 255 256 257 261 262 263
node 5 size: 193527 MB
node 5 free: 191377 MB
node 6 cpus: 72 73 74 78 79 80 84 85 86 90 91 92 264 265 266 270 271 272 276 277 278 282 283 284
node 6 size: 193527 MB
node 6 free: 191396 MB
node 7 cpus: 75 76 77 81 82 83 87 88 89 93 94 95 267 268 269 273 274 275 279 280 281 285 286 287
node 7 size: 193527 MB
node 7 free: 191277 MB
node 8 cpus: 96 97 98 102 103 104 108 109 110 114 115 116 288 289 290 294 295 296 300 301 302 306 307 308
node 8 size: 193527 MB
node 8 free: 191403 MB
node 9 cpus: 99 100 101 105 106 107 111 112 113 117 118 119 291 292 293 297 298 299 303
```

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

SPECrate2017\_fp\_base = 813

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_peak = 826

CPU2017 License: 9017

Test Date: Jul-2018

Test Sponsor: Lenovo Global Technology

Hardware Availability: Sep-2017

Tested by: Lenovo Global Technology

Software Availability: May-2018

### Platform Notes (Continued)

```

304 305 309 310 311
node 9 size: 193527 MB
node 9 free: 191409 MB
node 10 cpus: 120 121 122 126 127 128 132 133 134 138 139 140 312 313 314 318 319 320
324 325 326 330 331 332
node 10 size: 193527 MB
node 10 free: 191399 MB
node 11 cpus: 123 124 125 129 130 131 135 136 137 141 142 143 315 316 317 321 322 323
327 328 329 333 334 335
node 11 size: 193527 MB
node 11 free: 185621 MB
node 12 cpus: 144 145 146 150 151 152 156 157 158 162 163 164 336 337 338 342 343 344
348 349 350 354 355 356
node 12 size: 193527 MB
node 12 free: 191416 MB
node 13 cpus: 147 148 149 153 154 155 159 160 161 165 166 167 339 340 341 345 346 347
351 352 353 357 358 359
node 13 size: 193527 MB
node 13 free: 191414 MB
node 14 cpus: 168 169 170 174 175 176 180 181 182 186 187 188 360 361 362 366 367 368
372 373 374 378 379 380
node 14 size: 193527 MB
node 14 free: 191410 MB
node 15 cpus: 171 172 173 177 178 179 183 184 185 189 190 191 363 364 365 369 370 371
375 376 377 381 382 383
node 15 size: 193523 MB
node 15 free: 191418 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

```

From /proc/meminfo

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

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

**Test Date:** Jul-2018  
**Hardware Availability:** Sep-2017  
**Software Availability:** May-2018

### Platform Notes (Continued)

MemTotal: 3170193056 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-s8se 4.4.121-92.80-default #1 SMP Mon May 21 14:40:10 UTC 2018 (2afdd00)
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Jul 26 22:22
```

```
SPEC is set to: /home/cpu2017.1.0.2.ic18.0
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdb3       xfs   743G   54G  690G   8% /
```

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 -[PSE113P-1.30]- 06/14/2018
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)  
=====

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  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jul-2018

**Hardware Availability:** Sep-2017

**Software Availability:** May-2018

## Compiler Version Notes (Continued)

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

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

(Continued on next page)





# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

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

**Test Date:** Jul-2018  
**Hardware Availability:** Sep-2017  
**Software Availability:** May-2018

### Compiler Version Notes (Continued)

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

(Continued on next page)



# SPEC CPU2017 Floating Point Rate Result

Copyright 2017-2018 Standard Performance Evaluation Corporation

**Lenovo Global Technology**

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jul-2018

**Hardware Availability:** Sep-2017

**Software Availability:** May-2018

## Compiler Version Notes (Continued)

---

## 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  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jul-2018

**Hardware Availability:** Sep-2017

**Software Availability:** May-2018

## 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  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jul-2018

**Hardware Availability:** Sep-2017

**Software Availability:** May-2018

## 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**

ThinkSystem SR950  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Jul-2018

Hardware Availability: Sep-2017

Software Availability: May-2018

## 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  
(2.10 GHz, Intel Xeon Platinum 8160)

SPECrate2017\_fp\_base = 813

SPECrate2017\_fp\_peak = 826

**CPU2017 License:** 9017

**Test Sponsor:** Lenovo Global Technology

**Tested by:** Lenovo Global Technology

**Test Date:** Jul-2018

**Hardware Availability:** Sep-2017

**Software Availability:** May-2018

## 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-H.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-H.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 2018-07-27 04:22:49-0400.

Report generated on 2018-10-31 18:42:12 by CPU2017 PDF formatter v6067.

Originally published on 2018-08-21.