



# SPEC CPU®2017 Floating Point Speed Result

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## Lenovo Global Technology

ThinkSystem SR850 V3  
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECspeed®2017\_fp\_base = 398

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9017

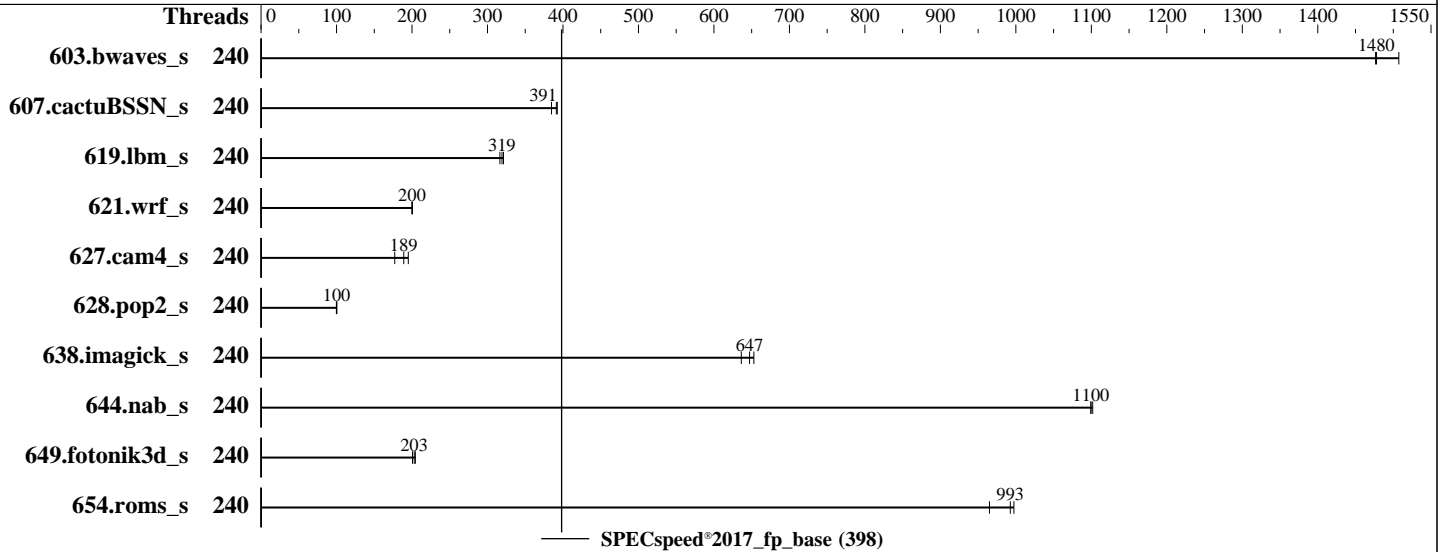
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Aug-2023

Hardware Availability: Jun-2023

Software Availability: Dec-2022



### Hardware

CPU Name: Intel Xeon Platinum 8490H  
 Max MHz: 3500  
 Nominal: 1900  
 Enabled: 240 cores, 4 chips  
 Orderable: 2,4 chips  
 Cache L1: 32 KB I + 48 KB D on chip per core  
 L2: 2 MB I+D on chip per core  
 L3: 112.5 MB I+D on chip per chip  
 Other: None  
 Memory: 2 TB (32 x 64 GB 2Rx4 PC5-4800B-R)  
 Storage: 1 x 960 GB M.2 NVME SSD  
 Other: None

### Software

OS: Red Hat Enterprise Linux 9.1 (Plow) (x86\_64)  
 Kernel 5.14.0-162.6.1.el9\_1.x86\_64  
 Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;  
 Parallel: Yes  
 Firmware: Lenovo BIOS Version RSE105E 1.10 released May-2023  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other: jemalloc memory allocator V5.0.1  
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage



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## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	240	39.1	1510	40.0	1480	<b>39.9</b>	<b>1480</b>							
607.cactuBSSN_s	240	42.5	392	<b>42.6</b>	<b>391</b>	43.3	385							
619.lbm_s	240	16.3	321	16.6	316	<b>16.4</b>	<b>319</b>							
621.wrf_s	240	<b>66.1</b>	<b>200</b>	66.0	201	66.1	200							
627.cam4_s	240	50.0	177	45.4	195	<b>46.9</b>	<b>189</b>							
628.pop2_s	240	119	99.8	<b>119</b>	<b>100</b>	118	100							
638.imagick_s	240	<b>22.3</b>	<b>647</b>	22.7	636	22.1	653							
644.nab_s	240	15.9	1100	<b>15.9</b>	<b>1100</b>	15.9	1100							
649.fotonik3d_s	240	<b>44.9</b>	<b>203</b>	45.4	201	44.6	204							
654.roms_s	240	16.3	965	15.8	997	<b>15.9</b>	<b>993</b>							

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## 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:  
KMP\_AFFINITY = "granularity=fine,compact"  
LD\_LIBRARY\_PATH = "/home/cpu2017-1.1.9-ic2023.0/lib/intel64:/home/cpu2017-1.1.9-ic2023.0/je5.0.1-64"  
MALLOCONF = "retain:true"  
OMP\_STACKSIZE = "192M"

## General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM memory using Redhat Enterprise Linux 8.0  
Transparent Huge Pages disabled by default  
echo never > /sys/kernel/mm/transparent\_hugepage/enabled  
echo never > /sys/kernel/mm/transparent\_hugepage/defrag  
Prior to runcpu invocation  
Filesystem page cache synced and cleared with:  
sync; echo 3> /proc/sys/vm/drop\_caches  
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) 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>



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## Platform Notes

BIOS configuration:

Choose Operating Mode set to Maximum Performance and then set it to Custom Mode

C-States set to Legacy

Hyper-Threading set to Disabled

Adjacent Cache Prefetch set to Disabled

AMP Prefetch set to Enabled

CPU P-state Control set to Autonomous

DCU Streamer Prefetcher set to Disabled

```
Sysinfo program /home/cpu2017-1.1.9-ic2023.0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Wed Aug 2 19:28:58 2023
```

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

-----  
Table of contents  
-----

1. uname -a
2. w
3. Username
4. ulimit -a
5. sysinfo process ancestry
6. /proc/cpuinfo
7. lscpu
8. numactl --hardware
9. /proc/meminfo
10. who -r
11. Systemd service manager version: systemd 250 (250-12.e19\_1)
12. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. sysctl
17. /sys/kernel/mm/transparent\_hugepage
18. /sys/kernel/mm/transparent\_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

-----  
1. uname -a  
Linux localhost.localdomain 5.14.0-162.6.1.e19\_1.x86\_64 #1 SMP PREEMPT\_DYNAMIC Fri Sep 30 07:36:03 EDT 2022  
x86\_64 x86\_64 x86\_64 GNU/Linux  
-----

-----  
2. w  
19:28:58 up 1:08, 1 user, load average: 0.02, 0.02, 1.67  
USER TTY LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 18:20 7.00s 1.14s 0.00s -bash  
-----

-----  
3. Username  
From environment variable \$USER: root  
-----

-----  
4. ulimit -a  
-----

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### Platform Notes (Continued)

```

real-time non-blocking time (microseconds, -R) unlimited
core file size (blocks, -c) 0
data seg size (kbytes, -d) unlimited
scheduling priority (-e) 0
file size (blocks, -f) unlimited
pending signals (-i) 8255569
max locked memory (kbytes, -l) 64
max memory size (kbytes, -m) unlimited
open files (-n) 1024
pipe size (512 bytes, -p) 8
POSIX message queues (bytes, -q) 819200
real-time priority (-r) 0
stack size (kbytes, -s) unlimited
cpu time (seconds, -t) unlimited
max user processes (-u) 8255569
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

```

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=240 --tune base -o all --define drop_caches
  fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=240 --tune base --output_format all --define
  drop_caches --nopower --runmode speed --tune base --size refspeed fpspeed --nopreenv --note-preenv
  --logfile $SPEC/tmp/CPU2017.028/temlogs/preenv.fpspeed.028.0.log --lognum 028.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
SPEC = /home/cpu2017-1.1.9-ic2023.0

```

```

-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Platinum 8490H
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2b0001b0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
cpu cores     : 60
siblings       : 60
4 physical ids (chips)
240 processors (hardware threads)
physical id 0: core ids 0-59
physical id 1: core ids 0-59
physical id 2: core ids 0-59
physical id 3: core ids 0-59
physical id 0: apicids
0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70,72
,74,76,78,80,82,84,86,88,90,92,94,96,98,100,102,104,106,108,110,112,114,116,118
physical id 1: apicids
128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,1
80,182,184,186,188,190,192,194,196,198,200,202,204,206,208,210,212,214,216,218,220,222,224,226,228,230,23
2,234,236,238,240,242,244,246
physical id 2: apicids
256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300,302,304,306,3

```

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### Platform Notes (Continued)

08, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374

physical id 3: apicids

384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

#### 7. lscpu

From lscpu from util-linux 2.37.4:

```

Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:         46 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                240
On-line CPU(s) list:   0-239
Vendor ID:             GenuineIntel
BIOS Vendor ID:        Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Platinum 8490H
BIOS Model name:       Intel(R) Xeon(R) Platinum 8490H
CPU family:            6
Model:                 143
Thread(s) per core:    1
Core(s) per socket:    60
Socket(s):             4
Stepping:              8
BogoMIPS:              3800.00
Flags:                 fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36
                        clflush dts acpi mmx fxsr sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp
                        lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
                        nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
                        ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1
                        sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand
                        lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
                        invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced
                        tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2
                        smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
                        avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
                        xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                        cqm_mbm_local split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida
                        arat pln pts avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes
                        vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid
                        bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear serialize
                        tsxldtrk pconfig arch_lbr amx_bf16 avx512_fp16 amx_tile amx_int8 flush_l1d
                        arch_capabilities
Virtualization:        VT-x
L1d cache:             11.3 MiB (240 instances)
L1i cache:             7.5 MiB (240 instances)
L2 cache:              480 MiB (240 instances)
L3 cache:              450 MiB (4 instances)
NUMA node(s):         4
NUMA node0 CPU(s):    0-59
NUMA node1 CPU(s):    60-119
NUMA node2 CPU(s):    120-179
NUMA node3 CPU(s):    180-239
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:   Not affected

```

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### Platform Notes (Continued)

Vulnerability Mds: Not affected  
 Vulnerability Meltdown: Not affected  
 Vulnerability Mmio stale data: Not affected  
 Vulnerability Retbleed: Not affected  
 Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl  
 Vulnerability Spectre v1: Mitigation; usercopy/swaps barriers and \_\_user pointer sanitization  
 Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSE-eIBRS SW sequence  
 Vulnerability Srbds: Not affected  
 Vulnerability Tsx async abort: Not affected

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	11.3M	12	Data	1	64	1	64
L1i	32K	7.5M	8	Instruction	1	64	1	64
L2	2M	480M	16	Unified	2	2048	1	64
L3	112.5M	450M	15	Unified	3	122880	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```
available: 4 nodes (0-3)
node 0 cpus: 0-59
node 0 size: 515744 MB
node 0 free: 514167 MB
node 1 cpus: 60-119
node 1 size: 516044 MB
node 1 free: 515070 MB
node 2 cpus: 120-179
node 2 size: 516082 MB
node 2 free: 515120 MB
node 3 cpus: 180-239
node 3 size: 516060 MB
node 3 free: 513974 MB
node distances:
node  0  1  2  3
0:  10  21  21  21
1:  21  10  21  21
2:  21  21  10  21
3:  21  21  21  10
```

9. /proc/meminfo

MemTotal: 2113466020 kB

10. who -r

run-level 3 Aug 2 18:20

11. Systemd service manager version: systemd 250 (250-12.e19\_1)

```
Default Target Status
multi-user      degraded
```

12. Failed units, from systemctl list-units --state=failed

```
UNIT                                LOAD ACTIVE SUB DESCRIPTION
* NetworkManager-wait-online.service loaded failed failed Network Manager Wait Online
* systemd-sysctl.service            loaded failed failed Apply Kernel Variables
```

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### Platform Notes (Continued)

-----  
13. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd crond dbus-broker getty@ irqbalance kdump low-memory-monitor mdmonitor microcode nis-domainname rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark sshd sssd systemd-network-generator udisks2 upower
enabled-runtime	systemd-remount-fs
disabled	canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot console-getty cpupower debug-shell firewalld kvm_stat man-db-restart-cache-update nftables pesign rdisc rhsm rhsm-facts rpmdb-rebuild serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysext
indirect	sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

-----  
14. Linux kernel boot-time arguments, from /proc/cmdline  
 BOOT\_IMAGE=(hd0,gpt3)/boot/vmlinuz-5.14.0-162.6.1.el9\_1.x86\_64  
 root=UUID=43a7f1b1-66b0-456a-8c3f-451305a00281  
 ro  
 resume=UUID=58de1c40-542f-453b-bb6a-6bbd3510660a

-----  
15. cpupower frequency-info  
 analyzing CPU 0:  
 Unable to determine current policy  
 boost state support:  
 Supported: yes  
 Active: yes

-----  
16. sysctl

kernel.numa_balancing	1
kernel.randomize_va_space	2
vm.compaction_proactiveness	20
vm.dirty_background_bytes	0
vm.dirty_background_ratio	10
vm.dirty_bytes	0
vm.dirty_expire_centisecs	3000
vm.dirty_ratio	20
vm.dirty_writeback_centisecs	500
vm.dirtytime_expire_seconds	43200
vm.extfrag_threshold	500
vm.min_unmapped_ratio	1
vm.nr_hugepages	0
vm.nr_hugepages_mempolicy	0
vm.nr_overcommit_hugepages	0
vm.swappiness	60
vm.watermark_boost_factor	15000
vm.watermark_scale_factor	10
vm.zone_reclaim_mode	0

-----  
17. /sys/kernel/mm/transparent\_hugepage  
 defrag always defer defer+madvise madvise [never]  
 enabled always madvise [never]  
 hpage\_pmd\_size 2097152  
 shmem\_enabled always within\_size advise [never] deny force

-----  
18. /sys/kernel/mm/transparent\_hugepage/khugepaged

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### Platform Notes (Continued)

```

alloc_sleep_millisecs  60000
defrag                  1
max_ptes_none          511
max_ptes_shared        256
max_ptes_swap          64
pages_to_scan          4096
scan_sleep_millisecs   10000

```

```

-----
19. OS release
From /etc/*-release /etc/*-version
os-release      Red Hat Enterprise Linux 9.1 (Plow)
redhat-release  Red Hat Enterprise Linux release 9.1 (Plow)
system-release  Red Hat Enterprise Linux release 9.1 (Plow)

```

```

-----
20. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2023.0
Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p4  xfs  819G  15G  804G   2% /home

```

```

-----
21. /sys/devices/virtual/dmi/id
Vendor:      Lenovo
Product:     ThinkSystem SR850 V3
Product Family: ThinkSystem
Serial:      None

```

```

-----
22. dmidecode
Additional information from dmidecode 3.3 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:
  21x SK Hynix HMC94AEBRA102N 64 GB 2 rank 4800
  4x SK Hynix HMC94AEBRA109N 64 GB 2 rank 4800
  7x SK Hynix HMC94AEBRA123N 64 GB 2 rank 4800

```

```

-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      Lenovo
BIOS Version:     RSE105E-1.10
BIOS Date:        05/12/2023
BIOS Revision:    1.10
Firmware Revision: 1.10

```

### Compiler Version Notes

=====  
C | 619.lbm\_s(base) 638.imagick\_s(base) 644.nab\_s(base)  
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.  
=====

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## Compiler Version Notes (Continued)

C++, C, Fortran | 607.cactuBSSN\_s(base)

```
-----
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
-----
```

Fortran | 603.bwaves\_s(base) 649.fotonik3d\_s(base) 654.roms\_s(base)

```
-----
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
-----
```

Fortran, C | 621.wrf\_s(base) 627.cam4\_s(base) 628.pop2\_s(base)

```
-----
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
-----
```

## Base Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

## Base Portability Flags

```
603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

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**Lenovo Global Technology**

SPECspeed®2017\_fp\_base = 398

ThinkSystem SR850 V3  
(1.90 GHz, Intel Xeon Platinum 8490H)

SPECspeed®2017\_fp\_peak = Not Run

CPU2017 License: 9017

Test Date: Aug-2023

Test Sponsor: Lenovo Global Technology

Hardware Availability: Jun-2023

Tested by: Lenovo Global Technology

Software Availability: Dec-2022

## Base Portability Flags (Continued)

638.imagick\_s: -DSPEC\_LP64  
644.nab\_s: -DSPEC\_LP64  
649.fotonik3d\_s: -DSPEC\_LP64  
654.roms\_s: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

```
-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Fortran benchmarks:

```
-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using both Fortran and C:

```
-m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:

```
-m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte
-auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

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-Eaglestream-W.html>  
<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.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-Eaglestream-W.xml>  
<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml>



# SPEC CPU®2017 Floating Point Speed Result

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## Lenovo Global Technology

ThinkSystem SR850 V3  
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SPECspeed®2017\_fp\_base = 398

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