



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_base = 295

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9017

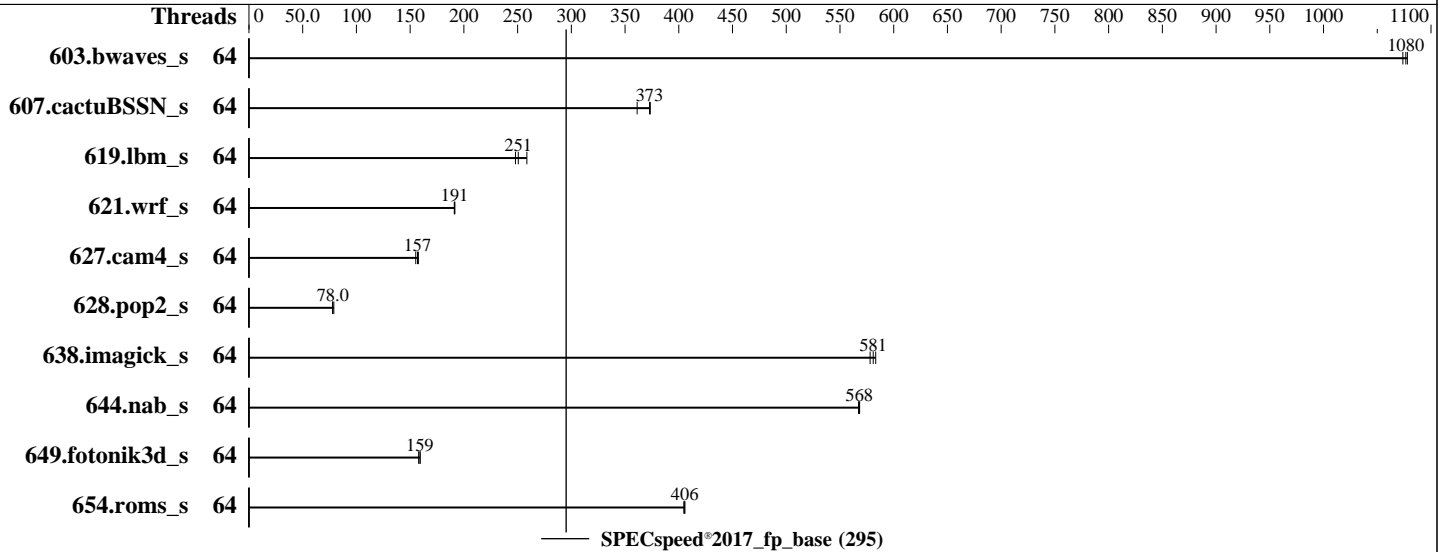
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022



Hardware

CPU Name: Intel Xeon Max 9462
 Max MHz: 3500
 Nominal: 2700
 Enabled: 64 cores, 2 chips
 Orderable: 1,2 chips
 Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 75 MB I+D on chip per chip
 Other: None
 Memory: 640 GB (16 x 32 GB 2Rx8 PC5-4800B-R + 2 x 64 GB HBM)
 Storage: 1 x 1.92 TB SATA SSD
 Other: None

Software

OS: SUSE Linux Enterprise Server 15 SP4 (x86_64)
 Kernel 5.14.21-150400.22-default
 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 USE117T 3.10 released Apr-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



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECspeed®2017_fp_base = 295

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	64	54.7	1080	<u>54.8</u>	<u>1080</u>	54.9	1070							
607.cactuBSSN_s	64	44.6	373	<u>44.7</u>	<u>373</u>	46.1	361							
619.lbm_s	64	21.1	248	20.3	259	<u>20.9</u>	<u>251</u>							
621.wrf_s	64	69.1	192	69.2	191	<u>69.1</u>	<u>191</u>							
627.cam4_s	64	<u>56.5</u>	<u>157</u>	56.2	158	57.1	155							
628.pop2_s	64	150	79.0	<u>152</u>	<u>78.0</u>	153	77.7							
638.imagick_s	64	24.7	583	<u>24.8</u>	<u>581</u>	25.0	578							
644.nab_s	64	<u>30.8</u>	<u>568</u>	30.7	568	30.8	567							
649.fotonik3d_s	64	57.2	159	57.7	158	<u>57.3</u>	<u>159</u>							
654.roms_s	64	<u>38.8</u>	<u>406</u>	38.8	406	38.9	405							

SPECspeed®2017_fp_base = 295

SPECspeed®2017_fp_peak = Not Run

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"
MALLOC_CONF = "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 enabled by default
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>

Platform Notes

BIOS configuration:
Choose Operating Mode set to Custom Mode

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_base = 295

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

Platform Notes (Continued)

Hyper-Threading set to Disabled
CPU P-state Control set to Legacy

Sysinfo program /home/cpu2017-1.1.9-ic2023.0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on Perf-Seoul2-R Mon May 15 09:19:29 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 249 (249.11+suse.124.g2bc0b2c447)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

1. uname -a
Linux Perf-Seoul2-R 5.14.21-150400.22-default #1 SMP PREEMPT_DYNAMIC Wed May 11 06:57:18 UTC 2022 (49db222)
x86_64 x86_64 x86_64 GNU/Linux

2. w
09:19:29 up 1 min, 1 user, load average: 0.61, 0.37, 0.14
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root tty1 - 09:18 8.00s 1.22s 0.00s -bash

3. Username
From environment variable \$USER: root

4. ulimit -a
core file size (blocks, -c) unlimited
data seg size (kbytes, -d) unlimited
scheduling priority (-e) 0
file size (blocks, -f) unlimited
pending signals (-i) 2062621
max locked memory (kbytes, -l) 64
max memory size (kbytes, -m) unlimited

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECspeed®2017_fp_base = 295

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```

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) 2062621
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
-bash
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2023.0-lin-core-avx512-speed-20221201.cfg --define cores=64 --tune base -o all --define drop_caches
  fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2023.0-lin-core-avx512-speed-20221201.cfg --define cores=64 --tune base --output_format all --define
  drop_caches --nopower --runmode speed --tune base --size refspeed fpspeed --nopreenv --note-preenv
  --logfile $SPEC/tmp/CPU2017.043/templogs/preenv.fpspeed.043.0.log --lognum 043.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-ic2023.0

```

6. /proc/cpuinfo

```

model name      : Intel (R) Xeon (R) CPU Max 9462
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2c0001d1
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 32
siblings       : 32
2 physical ids (chips)
64 processors (hardware threads)
physical id 0: core ids 0-31
physical id 1: core ids 0-31
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
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
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 2.37.2:
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):                 64
On-line CPU(s) list:   0-63

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECspeed®2017_fp_base = 295

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9017

Test Date: May-2023

Test Sponsor: Lenovo Global Technology

Hardware Availability: May-2023

Tested by: Lenovo Global Technology

Software Availability: Dec-2022

Platform Notes (Continued)

```

Vendor ID: GenuineIntel
Model name: Intel (R) Xeon (R) CPU Max 9462
CPU family: 6
Model: 143
Thread(s) per core: 1
Core(s) per socket: 32
Socket(s): 2
Stepping: 8
Frequency boost: enabled
CPU max MHz: 2701.0000
CPU min MHz: 800.0000
BogoMIPS: 5400.00
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 rdtscpl
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
nonstop_tsc cpuid aperfperf 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 hle
avx2 smep bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap
avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
xsavesopt xsaves 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 avx512_fp16 amx_tile flush_lld arch_capabilities
VT-x

Virtualization:
L1d cache: 3 MiB (64 instances)
L1i cache: 2 MiB (64 instances)
L2 cache: 128 MiB (64 instances)
L3 cache: 150 MiB (2 instances)
NUMA node(s): 2
NUMA node0 CPU(s): 0-31
NUMA node1 CPU(s): 32-63
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl and seccomp
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
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	3M	12	Data	1	64	1	64
L1i	32K	2M	8	Instruction	1	64	1	64
L2	2M	128M	16	Unified	2	2048	1	64
L3	75M	150M	15	Unified	3	81920	1	64

8. numactl --hardware

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

```

available: 2 nodes (0-1)
node 0 cpus: 0-31
node 0 size: 257703 MB

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECspeed®2017_fp_base = 295

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

```
node 0 free: 255499 MB
node 1 cpus: 32-63
node 1 size: 257976 MB
node 1 free: 256156 MB
node distances:
node 0 1
  0: 10 21
  1: 21 10
```

```
-----
9. /proc/meminfo
   MemTotal:      528055800 kB
```

```
-----
10. who -r
    run-level 3 May 15 09:18
```

```
-----
11. Systemd service manager version: systemd 249 (249.11+suse.124.g2bc0b2c447)
    Default Target Status
    multi-user      running
```

```
-----
12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled YaST2-Firstboot YaST2-Second-Stage apparmor auditd bluetooth cron display-manager getty@
haveged irqbalance iscsi issue-generator kbdsettings klog lvm2-monitor nscd postfix
purge-kernels rollback rsyslog smartd sshd wicked wickedd-auto4 wickedd-dhcp4
wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs
disabled accounts-daemon appstream-sync-cache autofs autoyast-initscripts blk-availability
bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd console-getty cups
cups-browsed debug-shell ebttables exchange-bmc-os-info firewallld gpm grub2-once
haveged-switch-root ipmi ipmievd iscsi-init iscsid iscsiui issue-add-ssh-keys kexec-load
lunmask man-db-create multipathd nfs nfs-blkmap nmb ostree-remount rdisc rpcbind
rpmconfigcheck rsyncd rtkit-daemon serial-getty@ smartd_generate_opts smb snmpd snmptrapd
speech-dispatcherd systemd-boot-check-no-failures systemd-network-generator systemd-sysext
systemd-time-wait-sync systemd-timesyncd udisks2 upower
indirect wickedd
```

```
-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
root=UUID=bfe63706-76a6-4686-beae-e8d9aed63f3a
splash=silent
mitigations=auto
quiet
security=apparmor
```

```
-----
14. cpupower frequency-info
    analyzing CPU 0:
        current policy: frequency should be within 800 MHz and 2.70 GHz.
                        The governor "ondemand" may decide which speed to use
                        within this range.
    boost state support:
        Supported: yes
        Active: yes
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECspeed®2017_fp_base = 295

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9017

Test Date: May-2023

Test Sponsor: Lenovo Global Technology

Hardware Availability: May-2023

Tested by: Lenovo Global Technology

Software Availability: Dec-2022

Platform Notes (Continued)

15. 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

```

```

-----
16. /sys/kernel/mm/transparent_hugepage
defrag      always defer defer+madvice [madvice] never
enabled     [always] madvice never
hpage_pmd_size 2097152
shmem_enabled always within_size advise [never] deny force

```

```

-----
17. /sys/kernel/mm/transparent_hugepage/khugepaged
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

```

```

-----
18. OS release
From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP4

```

```

-----
19. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2023.0
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   1.8T   23G  1.8T   2% /

```

```

-----
20. /sys/devices/virtual/dmi/id
Vendor:      Lenovo
Product:     ThinkSystem SD650 V3
Product Family: ThinkSystem
Serial:      123456789

```

```

-----
21. dmidecode
Additional information from dmidecode 3.2 follows.  WARNING: Use caution when you interpret this section.
The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately

```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_base = 295

SPECspeed®2017_fp_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Platform Notes (Continued)

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:

8x Intel 16 GB 1 rank 3200
16x Samsung M321R4GA3BB0-CQKVG 32 GB 2 rank 4800

22. BIOS

(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor: Lenovo
BIOS Version: USE117T-3.10
BIOS Date: 04/17/2023
BIOS Revision: 3.10
Firmware Revision: 2.10

Each Intel Xeon CPU Max processor is configured with 64 GB of High Bandwidth Memory (HBM) in-package. dmidecode is additionally reporting the capacity of the CPU in-package HBM stack as: '8x Intel 16 GB 1 rank 3200'

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.
=====

=====
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.
=====



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

SPECspeed®2017_fp_base = 295

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_peak = Not Run

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

Test Date: May-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

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
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 -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc
```

Fortran benchmarks:

```
-m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX512 -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 -xCORE-AVX512 -Ofast -ffast-math -flto
```

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SD650 V3
(2.70 GHz, Intel Xeon Max 9462)

SPECspeed®2017_fp_base = 295

SPECspeed®2017_fp_peak = Not Run

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: May-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

```
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -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 -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-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-P.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-P.xml>
<http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml>

SPEC CPU and SPECspeed 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 v1.1.9 on 2023-05-14 21:19:29-0400.
Report generated on 2023-06-13 14:22:12 by CPU2017 PDF formatter v6716.
Originally published on 2023-06-13.