SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

$SPECspeed^{®}2017\_fp\_base = 186$

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

$SPECspeed^{®}2017_fp_peak = $ Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Benchmark	Threads	Result
603.bwaves_s	24	664
607.cactuBSSN_s	24	238
619.lbm_s	24	158
621.wrf_s	24	144
627.cam4_s	24	89.9
628.pop2_s	24	78.9
638.imagick_s	24	340
644.nab_s	24	225
649.fotonik3d_s	24	131
654.roms_s	24	197

SPECspeed®2017_fp_base (186)

Hardware

CPU Name: Intel Xeon Silver 4510T
  Max MHz: 3700
  Nominal: 2000
Enabled: 24 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:   30 MB I+D on chip per chip
  Other: None
Memory: 1 TB (16 x 64 GB 2Rx4 PC5-5600B-R, running at 4400)
Storage: 1 x 960 GB SATA SSD
Other: Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP4
  Kernel 5.14.21-150400.22-default
Compiler: C/C++: Version 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux;
  Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;
Parallel: Yes
Firmware: Lenovo BIOS Version ESE121V 3.10 released Jan-2024
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 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base =   186

SPECspeed®2017_fp_peak = Not Run

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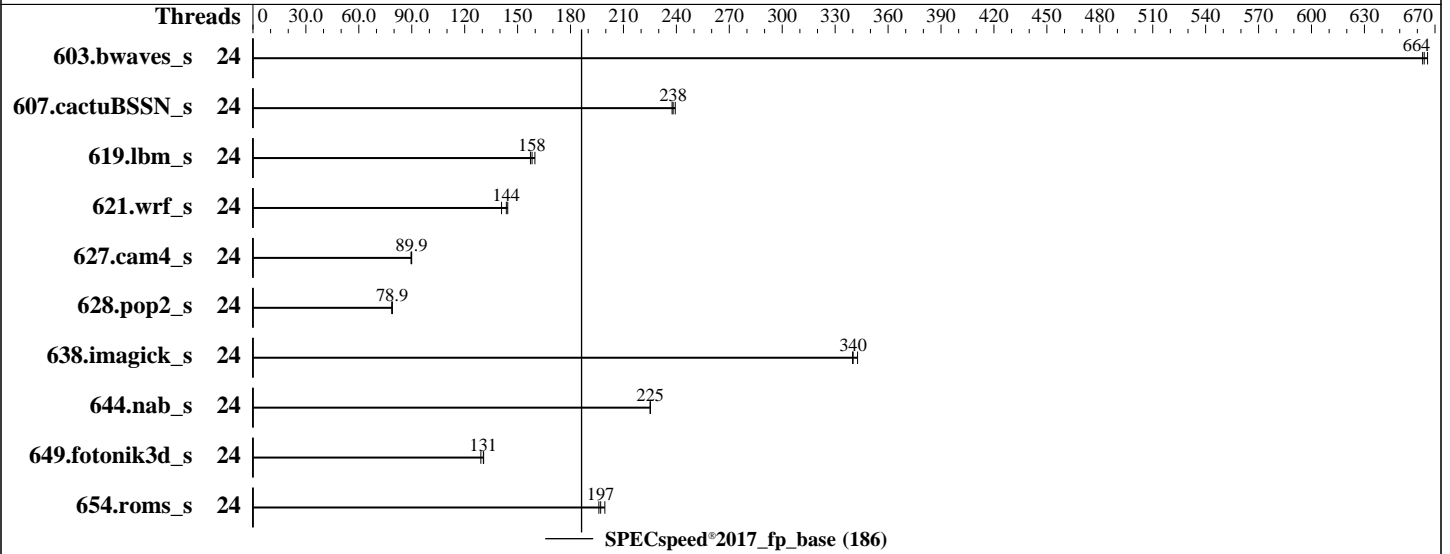**Test Sponsor:** Lenovo Global Technology
Tested by: Lenovo Global Technology

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	24	89.0	663	88.6	666	**88.9**	**664**							
607.cactuBSSN_s	24	70.2	238	69.6	239	**70.0**	**238**							
619.lbm_s	24	32.8	160	33.3	157	**33.1**	**158**							
621.wrf_s	24	93.9	141	**92.1**	**144**	91.6	144							
627.cam4_s	24	98.6	89.9	**98.6**	**89.9**	98.9	89.6							
628.pop2_s	24	150	79.0	**151**	**78.9**	151	78.7							
638.imagick_s	24	42.4	340	**42.4**	**340**	42.1	343							
644.nab_s	24	77.5	225	**77.6**	**225**	77.6	225							
649.fotonik3d_s	24	69.7	131	70.6	129	**69.8**	**131**							
654.roms_s	24	78.9	199	**79.9**	**197**	80.3	196							
SPECspeed®2017_fp_base =		**186**												
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-ic2023.2.3/lib/intel64:/home/cpu2017-1.1.9-ic2023.2.3/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
```

SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base = 186

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

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 Enable

 Sysinfo program /home/cpu2017-1.1.9-ic2023.2.3/bin/sysinfo
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
 running on localhost Mon Mar  4 15:32:06 2024

 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 localhost 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
    15:32:06 up 2 min,  1 user,  load average: 0.61, 0.52, 0.21
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1     -                15:30   14.00s  0.83s  0.00s /bin/bash ./speccpu_ny.sh

 -----------------------------------------------------------
 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
```

(Continued on next page)

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base = 186

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
   file size              (blocks, -f) unlimited
   pending signals              (-i) 4127107
   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) 4127107
   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
 /bin/bash ./speccpu_ny.sh
 /bin/bash ./speccpu_ny.sh
 runcpu --nobuild --action validate --define default-platform-flags -c
   ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define cores=24 --tune base -o all --define drop_caches
   fpspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define cores=24 --tune base --output_format all --define
   drop_caches --nopower --runmode speed --tune base --size refspeed fpspeed --nopreenv --note-preenv
   --logfile $SPEC/tmp/CPU2017.394/templogs/preenv.fpspeed.394.0.log --lognum 394.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2017-1.1.9-ic2023.2.3

   ----------------------------------------------------------
6. /proc/cpuinfo
   model name         : INTEL(R) XEON(R) SILVER 4510T
   vendor_id          : GenuineIntel
   cpu family         : 6
   model              : 143
   stepping           : 8
   microcode          : 0x2b000571
   bugs               : spectre_v1 spectre_v2 spec_store_bypass swapgs
   cpu cores          : 12
   siblings           : 12
   2 physical ids (chips)
   24 processors (hardware threads)
   physical id 0: core ids 0-11
   physical id 1: core ids 0-11
   physical id 0: apicids 0,2,4,6,8,10,12,14,16,18,20,22
   physical id 1: apicids 64,66,68,70,72,74,76,78,80,82,84,86
  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):                  24
```

(Continued on next page)

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

Platform Notes (Continued)

```
   On-line CPU(s) list:         0-23
   Vendor ID:                   GenuineIntel
   Model name:                  INTEL(R) XEON(R) SILVER 4510T
   CPU family:                  6
   Model:                       143
   Thread(s) per core:          1
   Core(s) per socket:          12
   Socket(s):                   2
   Stepping:                    8
   BogoMIPS:                    4000.00
   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 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 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
                                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 avx512_fp16 amx_tile flush_l1d arch_capabilities
   Virtualization:              VT-x
   L1d cache:                   1.1 MiB (24 instances)
   L1i cache:                   768 KiB (24 instances)
   L2 cache:                    48 MiB (24 instances)
   L3 cache:                    60 MiB (2 instances)
   NUMA node(s):                2
   NUMA node0 CPU(s):           0-11
   NUMA node1 CPU(s):           12-23
   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     1.1M  12 Data            1    64      1            64
   L1i      32K     768K   8 Instruction     1    64      1            64
   L2        2M      48M  16 Unified         2  2048      1            64
   L3       30M      60M  15 Unified         3 32768      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: 0-11
     node 0 size: 515757 MB
     node 0 free: 514767 MB
     node 1 cpus: 12-23
```

(Continued on next page)

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base =   186

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
  node 1 size: 516042 MB
  node 1 free: 515560 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10


  ------------------------------------------------------------
  9. /proc/meminfo
     MemTotal:       1056563704 kB


  ------------------------------------------------------------
  10. who -r
    run-level 3 Mar 4 15:30


  ------------------------------------------------------------
  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 cron getty@ haveged irqbalance
                    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        autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait
                    chronyd console-getty cups cups-browsed debug-shell ebtables exchange-bmc-os-info
                    firewalld gpm grub2-once haveged-switch-root hwloc-dump-hwdata ipmi ipmievd
                    issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap rdisc
                    rpcbind rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts snmpd snmptrapd
                    systemd-boot-check-no-failures systemd-network-generator systemd-sysext
                    systemd-time-wait-sync systemd-timesyncd
    generated       ntp_sync
    indirect        wickedd


  ------------------------------------------------------------
  13. Linux kernel boot-time arguments, from /proc/cmdline
    BOOT_IMAGE=/boot/vmlinuz-5.14.21-150400.22-default
    root=UUID=efe3d3bb-d17b-48bc-af3c-7ee429916327
    splash=silent
    mitigations=auto
    quiet
    security=apparmor


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


  ------------------------------------------------------------
  15. sysctl
    kernel.numa_balancing            1
    kernel.randomize_va_space        2
    vm.compaction_proactiveness      20
    vm.dirty_background_bytes        0
```

(Continued on next page)

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base =   186

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
  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+madvise [madvise] never
  enabled         [always] madvise 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-ic2023.2.3
  Filesystem      Type  Size  Used Avail Use% Mounted on
  /dev/sda2       xfs   894G  141G  753G  16% /


  ----------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         Lenovo
    Product:        ThinkSystem SR630 V3 MB,EGS,DDR5,NY,1U
    Product Family: ThinkSystem
    Serial:         1234567890


  ----------------------------------------------------------
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
  determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the
  "DMTF SMBIOS" standard.
  Memory:
    13x Samsung M321R8GA0PB0-CWMKH 64 GB 2 rank 5600, configured at 4400
    3x Samsung M321R8GA0PB0-CWMXH 64 GB 2 rank 5600, configured at 4400
```

(Continued on next page)

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base =   186

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Platform Notes (Continued)

```
    ----------------------------------------------------------
    22. BIOS
    (This section combines info from /sys/devices and dmidecode.)
       BIOS Vendor:        Lenovo
       BIOS Version:       ESE121V-3.10
       BIOS Date:          01/09/2024
       BIOS Revision:      3.10
       Firmware Revision: 3.90
```

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 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 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 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.
----------------------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

Fortran benchmarks:
ifx

(Continued on next page)

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base = 186

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Base Compiler Invocation (Continued)

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:
```
-w -std=c11 -m64 -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:
```
-w -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:
```
-w -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 -nostandard-realloc-lhs
-align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

Benchmarks using Fortran, C, and C++:
```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast
```

(Continued on next page)

SPEC CPU®2017 Floating Point Speed Result
Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem SR630 V3
(2.00 GHz, Intel Xeon Silver 4510T)

SPECspeed®2017_fp_base =   186

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Mar-2024
Hardware Availability: Feb-2024
Software Availability: Dec-2023

Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++ (continued):
```
-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-AA.html
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-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-AA.xml
http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml

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 2024-03-04 02:32:05-0500.
Report generated on 2024-03-27 20:20:33 by CPU2017 PDF formatter v6716.
Originally published on 2024-03-26.