SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Lenovo Global Technology

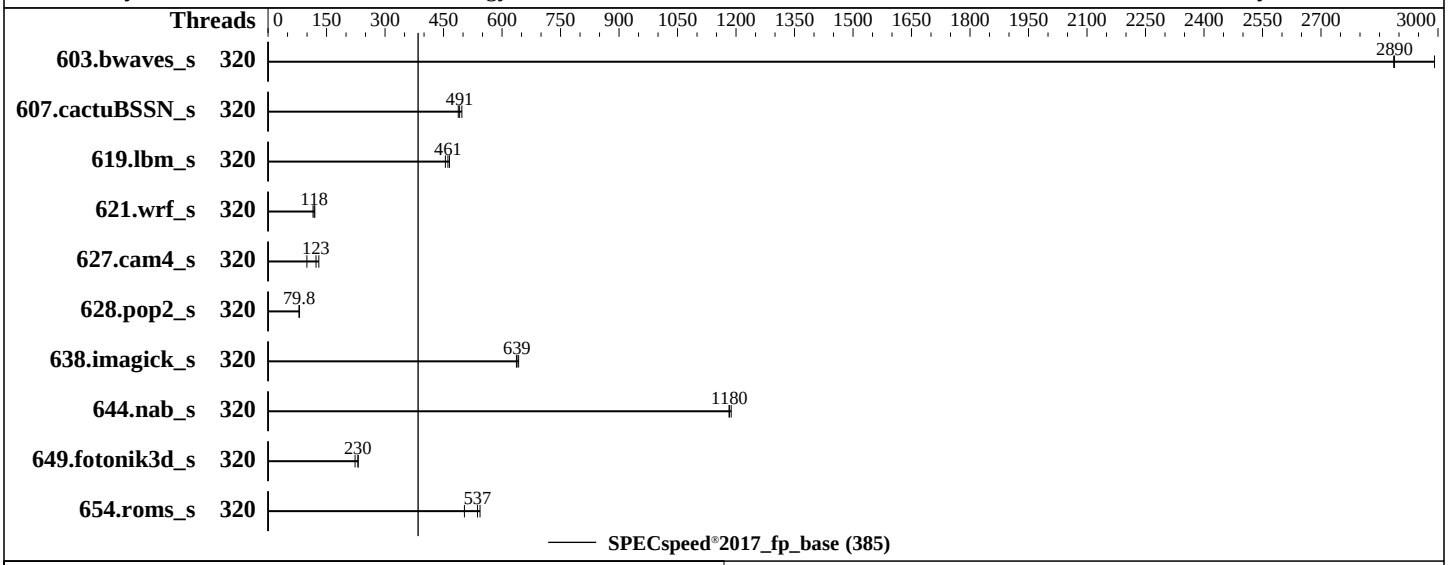
ThinkSystem SR950 V3
(2.20 GHz, Intel Xeon Platinum 8460H)

SPECspeed®2017_fp_base = 385

SPECspeed®2017_fp_peak = Not Run

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

Test Date: Dec-2023
Hardware Availability: Oct-2023
Software Availability: Dec-2023



Hardware

CPU Name:	Intel Xeon Platinum 8460H
Max MHz:	3800
Nominal:	2200
Enabled:	320 cores, 8 chips, 2 threads/core
Orderable:	8 chips
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	2 MB I+D on chip per core
L3:	105 MB I+D on chip per chip
Other:	None
Memory:	4 TB (64 x 64 GB 2Rx4 PC5-4800B-R)
Storage:	1 x 480 GB SATA SSD
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP5 Kernel 5.14.21-150500.53-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 EBE103M 1.10 released Oct-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

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	320	19.7	2990	**20.4**	**2890**	20.4	2890							
607.cactuBSSN_s	320	34.2	488	33.5	497	**33.9**	**491**							
619.lbm_s	320	**11.4**	**461**	11.5	455	11.3	465							
621.wrf_s	320	115	115	**112**	**118**	110	120							
627.cam4_s	320	**72.1**	**123**	89.0	99.6	68.1	130							
628.pop2_s	320	**149**	**79.8**	149	79.7	147	80.7							
638.imagick_s	320	**22.6**	**639**	22.7	637	22.5	643							
644.nab_s	320	14.8	1180	14.7	1190	**14.8**	**1180**							
649.fotonik3d_s	320	39.4	231	**39.6**	**230**	40.9	223							
654.roms_s	320	31.3	504	29.0	544	**29.3**	**537**							

SPECspeed®2017_fp_base = 385

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,1,0"
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
```

Platform Notes

```
BIOS configuration:
Choose Operating Mode set to Maximum Performance
```

(Continued on next page)

Platform Notes (Continued)

```
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 Fri Dec 15 13:37:05 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 (249.16+suse.171.gdad0071f15)
 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 5.14.21-150500.53-default #1 SMP PREEMPT_DYNAMIC Wed May 10 07:56:26 UTC 2023 (b630043)
   x86_64 x86_64 x86_64 GNU/Linux

 ------------------------------------------------------------
 2. w
    13:37:05 up  6:28,  1 user,  load average: 10.69, 144.75, 221.51
   USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
   root     tty1     -                07:16    6:17m  1.11s  0.00s /bin/bash ./speccpu_rock.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
   file size               (blocks, -f) unlimited
   pending signals                 (-i) 16511690
   max locked memory       (kbytes, -l) 64
   max memory size         (kbytes, -m) unlimited
```

(Continued on next page)

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) 16511690
   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_rock.sh
 /bin/bash ./speccpu_rock.sh
 runcpu --nobuild --action validate --define default-platform-flags -c
   ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define cores=320 --tune base -o all --define smt-on
   --define drop_caches fpspeed
 runcpu --nobuild --action validate --define default-platform-flags --configfile
   ic2023.2.3-lin-core-avx512-speed-20231121.cfg --define cores=320 --tune base --output_format all --define
   smt-on --define drop_caches --nopower --runmode speed --tune base --size refspeed fpspeed --nopreenv
   --note-preenv --logfile $SPEC/tmp/CPU2017.190/templogs/preenv.fpspeed.190.0.log --lognum 190.0
   --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) Platinum 8460H
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 143
    stepping        : 8
    microcode       : 0x2b0004b1
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
    cpu cores       : 40
    siblings        : 80
    8 physical ids (chips)
    640 processors (hardware threads)
    physical id 0: core ids 0-39
    physical id 1: core ids 0-39
    physical id 2: core ids 0-39
    physical id 3: core ids 0-39
    physical id 4: core ids 0-39
    physical id 5: core ids 0-39
    physical id 6: core ids 0-39
    physical id 7: core ids 0-39
    physical id 0: apicids 0-79
    physical id 1: apicids 128-207
    physical id 2: apicids 256-335
    physical id 3: apicids 384-463
    physical id 4: apicids 512-591
    physical id 5: apicids 640-719
    physical id 6: apicids 768-847
    physical id 7: apicids 896-975
  Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
  virtualized systems.  Use the above data carefully.
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
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):                          640
  On-line CPU(s) list:             0-639
  Vendor ID:                       GenuineIntel
  Model name:                      Intel(R) Xeon(R) Platinum 8460H
  CPU family:                      6
  Model:                           143
  Thread(s) per core:              2
  Core(s) per socket:              40
  Socket(s):                       8
  Stepping:                        8
  CPU max MHz:                     3800.0000
  CPU min MHz:                     800.0000
  BogoMIPS:                        4400.00
  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 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:                       15 MiB (320 instances)
  L1i cache:                       10 MiB (320 instances)
  L2 cache:                        640 MiB (320 instances)
  L3 cache:                        840 MiB (8 instances)
  NUMA node(s):                    8
  NUMA node0 CPU(s):               0-39,320-359
  NUMA node1 CPU(s):               40-79,360-399
  NUMA node2 CPU(s):               80-119,400-439
  NUMA node3 CPU(s):               120-159,440-479
  NUMA node4 CPU(s):               160-199,480-519
  NUMA node5 CPU(s):               200-239,520-559
  NUMA node6 CPU(s):               240-279,560-599
  NUMA node7 CPU(s):               280-319,600-639
  Vulnerability Itlb multihit:     Not affected
  Vulnerability L1tf:              Not affected
  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 and seccomp
  Vulnerability Spectre v1:        Mitigation; usercopy/swapgs barriers and __user pointer sanitization
```

(Continued on next page)

Platform Notes (Continued)

```
  Vulnerability Spectre v2:         Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSB-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      15M   12 Data            1     64        1             64
     L1i       32K      10M    8 Instruction     1     64        1             64
     L2         2M     640M   16 Unified         2   2048        1             64
     L3       105M     840M   15 Unified         3 114688        1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 8 nodes (0-7)
  node 0 cpus: 0-39,320-359
  node 0 size: 515604 MB
  node 0 free: 514080 MB
  node 1 cpus: 40-79,360-399
  node 1 size: 516075 MB
  node 1 free: 514571 MB
  node 2 cpus: 80-119,400-439
  node 2 size: 516041 MB
  node 2 free: 514697 MB
  node 3 cpus: 120-159,440-479
  node 3 size: 516075 MB
  node 3 free: 514874 MB
  node 4 cpus: 160-199,480-519
  node 4 size: 516075 MB
  node 4 free: 514833 MB
  node 5 cpus: 200-239,520-559
  node 5 size: 516075 MB
  node 5 free: 514572 MB
  node 6 cpus: 240-279,560-599
  node 6 size: 516075 MB
  node 6 free: 514140 MB
  node 7 cpus: 280-319,600-639
  node 7 size: 515928 MB
  node 7 free: 513376 MB
  node distances:
  node   0   1   2   3   4   5   6   7
    0:  10  21  21  31  31  21  21  31
    1:  21  10  31  21  21  31  31  21
    2:  21  31  10  21  21  31  31  21
    3:  31  21  21  10  31  21  21  31
    4:  31  21  21  31  10  21  21  31
    5:  21  31  31  21  21  10  31  21
    6:  21  31  31  21  21  31  10  21
    7:  31  21  21  31  31  21  21  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       4227025008 kB

------------------------------------------------------------
10. who -r
  run-level 3 Dec 15 07:10

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

(Continued on next page)

Platform Notes (Continued)

```
11. Systemd service manager version: systemd 249 (249.16+suse.171.gdad0071f15)
  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@ irqbalance issue-generator
                   kbdsettings klog lvm2-monitor nscd nvmefc-boot-connections postfix purge-kernels rollback
                   rsyslog smartd sshd systemd-pstore 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 haveged-switch-root ipmi ipmievd issue-add-ssh-keys
                   kexec-load lunmask man-db-create multipathd nfs nfs-blkmap nmb nvmf-autoconnect rpcbind
                   rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts smb 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-5.14.21-150500.53-default
  root=UUID=b994fb3e-4843-44ed-8f13-53774aafae18
  splash=silent
  mitigations=auto
  quiet
  security=apparmor

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 3.80 GHz.
                    The governor "powersave" may decide which speed to use
                    within this range.
    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
  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
```

(Continued on next page)

Platform Notes (Continued)

```
  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 SP5

------------------------------------------------------------
19. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2023.2.3
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sdb3      xfs   445G   82G  363G  19% /

------------------------------------------------------------
20. /sys/devices/virtual/dmi/id
    Vendor:         Lenovo
    Product:        ThinkSystem SR950 V3
    Product Family: ThinkSystem
    Serial:         BLRSDV044

------------------------------------------------------------
21. dmidecode
  Additional information from dmidecode 3.4 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:
    41x SK Hynix HMCG94AEBRA102N 64 GB 2 rank 4800
    14x SK Hynix HMCG94AEBRA109N 64 GB 2 rank 4800
    9x SK Hynix HMCG94AEBRA123N 64 GB 2 rank 4800


------------------------------------------------------------
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       Lenovo
   BIOS Version:      EBE103M-1.10
   BIOS Date:         10/10/2023
   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 2023.2.3 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`

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
-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

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 2023-12-15 00:37:05-0500.
Report generated on 2024-01-03 17:39:57 by CPU2017 PS formatter v6716.
Originally published on 2024-01-02.