SPEC CPU®2017 Floating Point Speed Result

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IEIT Systems Co., Ltd.

$SPECspeed®2017\_fp\_base = 179$

NF5280M7 (Intel Xeon Silver 4410Y)

$SPECspeed®2017\_fp\_peak = 179$
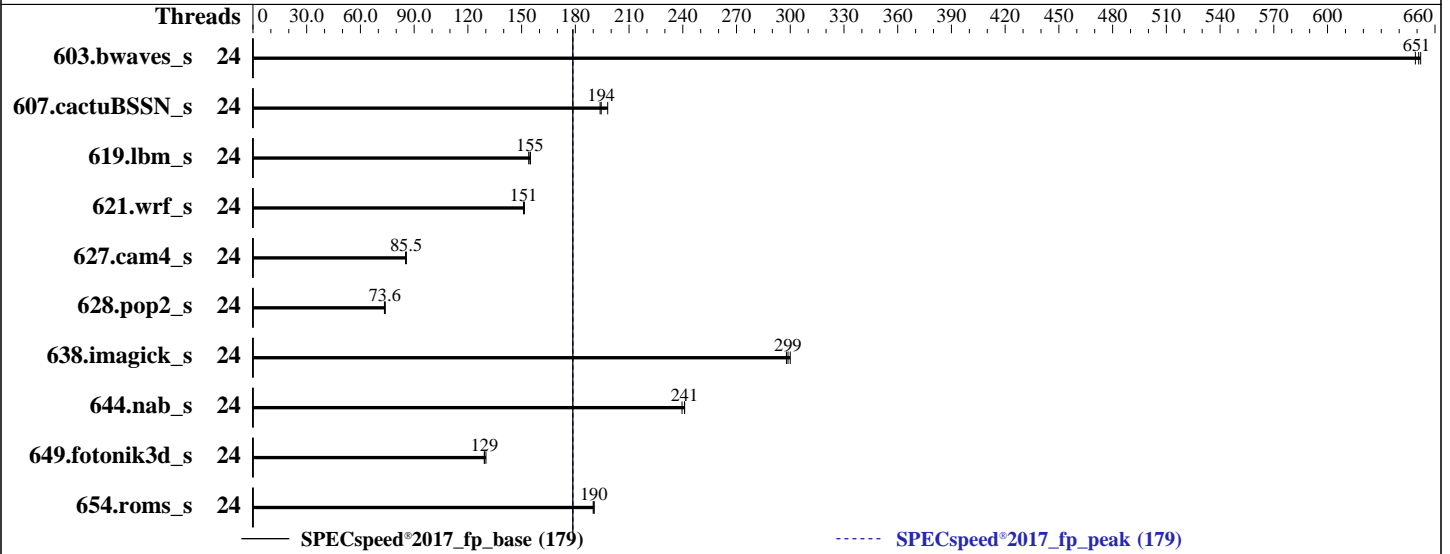
CPU2017 License: 3358   **Test Date:** Oct-2023
Test Sponsor: IEIT Systems Co., Ltd.   **Hardware Availability:** Apr-2023
Tested by: IEIT Systems Co., Ltd.   **Software Availability:** Dec-2022

Benchmark	Threads	Result
603.bwaves_s	24	651
607.cactuBSSN_s	24	194
619.lbm_s	24	155
621.wrf_s	24	151
627.cam4_s	24	85.5
628.pop2_s	24	73.6
638.imagick_s	24	299
644.nab_s	24	241
649.fotonik3d_s	24	129
654.roms_s	24	190

SPECspeed®2017_fp_base (179)   SPECspeed®2017_fp_peak (179)

Hardware

CPU Name: Intel Xeon Silver 4410Y
  Max MHz: 3900
  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: 512 GB (16 x 32 GB 2Rx4 PC5-4800B-R, running at 4000)
Storage: 1 x 1 TB NVME SSD
Other: None

Software

OS: Red Hat Enterprise Linux 9.0 (Plow)
  5.14.0-70.22.1.el9_0.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: Version 03.01.00 released Dec-2022
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
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	24	90.5	652	90.9	649	**90.6**	**651**	24	90.5	652	90.9	649	**90.6**	**651**
607.cactuBSSN_s	24	84.2	198	86.0	194	**85.7**	**194**	24	84.2	198	86.0	194	**85.7**	**194**
619.lbm_s	24	34.0	154	**33.9**	**155**	33.8	155	24	34.0	154	**33.9**	**155**	33.8	155
621.wrf_s	24	87.6	151	87.3	152	**87.5**	**151**	24	87.6	151	87.3	152	**87.5**	**151**
627.cam4_s	24	104	85.6	104	85.2	**104**	**85.5**	24	104	85.6	104	85.2	**104**	**85.5**
628.pop2_s	24	**161**	**73.6**	161	73.8	162	73.4	24	**161**	**73.6**	161	73.8	162	73.4
638.imagick_s	24	48.1	300	**48.3**	**299**	48.4	298	24	48.1	300	**48.3**	**299**	48.4	298
644.nab_s	24	72.9	240	72.5	241	**72.5**	**241**	24	72.9	240	72.5	241	**72.5**	**241**
649.fotonik3d_s	24	70.6	129	70.1	130	**70.5**	**129**	24	70.6	129	70.1	130	**70.5**	**129**
654.roms_s	24	82.6	191	**82.7**	**190**	82.9	190	24	82.6	191	**82.7**	**190**	82.9	190

SPECspeed®2017_fp_base =	**179**
SPECspeed®2017_fp_peak =	**179**

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/lib/intel64:/home/CPU2017/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
```

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Platform Notes

```
BIOS configuration:
ENERGY_PERF_BIAS_CFG mode set to Performance
Hardware Prefetch set to Disable
VT Support set to Disable
Hyper Threading set to disable

Sysinfo program /home/CPU2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Mon Oct 16 07:13:19 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 (250-6.el9_0)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
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 5.14.0-70.22.1.el9_0.x86_64 #1 SMP PREEMPT Tue Aug 2 10:02:12 EDT 2022 x86_64 x86_64 x86_64
  GNU/Linux


------------------------------------------------------------
2. w
   07:13:19 up 1 min,  1 user,  load average: 0.32, 0.14, 0.05
  USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1       07:12    7.00s  0.80s  0.00s sh
  reportable-ic2023.0-lin-sapphirerapids-speed-smt-off-20221201.sh

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


------------------------------------------------------------
4. ulimit -a
  real-time non-blocking time  (microseconds, -R) unlimited
  core file size              (blocks, -c) 0
```

(Continued on next page)

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Platform Notes (Continued)

```
    data seg size              (kbytes, -d) unlimited
    scheduling priority             (-e) 0
    file size                  (blocks, -f) unlimited
    pending signals                 (-i) 2062287
    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) 2062287
    virtual memory             (kbytes, -v) unlimited
    file locks                      (-x) unlimited


    ----------------------------------------------------------
    5. sysinfo process ancestry
    /usr/lib/systemd/systemd --switched-root --system --deserialize 27
    login -- root
    -bash
    sh reportable-ic2023.0-lin-sapphirerapids-speed-smt-off-20221201.sh
    runcpu --nobuild --action validate --define default-platform-flags -c
      ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=24 --tune base,peak -o all --define
      drop_caches fpspeed
    runcpu --nobuild --action validate --define default-platform-flags --configfile
      ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=24 --tune base,peak --output_format all
      --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed --nopreenv
      --note-preenv --logfile $SPEC/tmp/CPU2017.008/templogs/preenv.fpspeed.008.0.log --lognum 008.0
      --from_runcpu 2
    specperl $SPEC/bin/sysinfo
    $SPEC = /home/CPU2017


    ----------------------------------------------------------
    6. /proc/cpuinfo
       model name      : Intel(R) Xeon(R) Silver 4410Y
       vendor_id       : GenuineIntel
       cpu family      : 6
       model           : 143
       stepping        : 7
       microcode       : 0x2b000130
       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 128,130,132,134,136,138,140,142,144,146,148,150
     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:                  52 bits physical, 57 bits virtual
```

(Continued on next page)

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Platform Notes (Continued)

```
  Byte Order:                        Little Endian
  CPU(s):                            24
  On-line CPU(s) list:               0-23
  Vendor ID:                         GenuineIntel
  BIOS Vendor ID:                    Intel(R) Corporation
  Model name:                        Intel(R) Xeon(R) Silver 4410Y
  BIOS Model name:                   Intel(R) Xeon(R) Silver 4410Y
  CPU family:                        6
  Model:                             143
  Thread(s) per core:                1
  Core(s) per socket:                12
  Socket(s):                         2
  Stepping:                          7
  CPU max MHz:                       3900.0000
  CPU min MHz:                       800.0000
  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 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 hwp hwp_act_window hwp_epp hwp_pkg_req 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
  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

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

(Continued on next page)

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Platform Notes (Continued)

```
 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: 257613 MB
  node 0 free: 257096 MB
  node 1 cpus: 12-23
  node 1 size: 257997 MB
  node 1 free: 257298 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10


  ----------------------------------------------------------------
 9. /proc/meminfo
  MemTotal:       527986460 kB


  ----------------------------------------------------------------
10. who -r
  run-level 3 Oct 16 07:12


  ----------------------------------------------------------------
11. Systemd service manager version: systemd 250 (250-6.el9_0)
  Default Target  Status
  multi-user      running


  ----------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          dbus-broker getty@ tuned udisks2 upower
  enabled-runtime  systemd-remount-fs
  disabled         NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd
                   blk-availability canberra-system-bootup canberra-system-shutdown
                   canberra-system-shutdown-reboot chrony-wait chronyd console-getty cpupower crond
                   debug-shell firewalld irqbalance kdump kvm_stat lvm2-monitor man-db-restart-cache-update
                   mdmonitor microcode nftables nis-domainname rdisc rhsm rhsm-facts rhsmcertd rpmdb-rebuild
                   rsyslog selinux-autorelabel-mark sep5 serial-getty@ sshd sshd-keygen@ sssd
                   systemd-boot-check-no-failures systemd-network-generator systemd-pstore systemd-sysext
  indirect         sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

  ----------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.22.1.el9_0.x86_64
  root=/dev/mapper/rhel-root
  ro
  resume=/dev/mapper/rhel-swap
  rd.lvm.lv=rhel/root
  rd.lvm.lv=rhel/swap


  ----------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 3.90 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes
```

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Platform Notes (Continued)

```
---------------------------------------------------------------
15. tuned-adm active
  Current active profile: throughput-performance

---------------------------------------------------------------
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                   40
  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                    10
  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
  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 9.0 (Plow)
  redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
  system-release Red Hat Enterprise Linux release 9.0 (Plow)

---------------------------------------------------------------
20. Disk information
SPEC is set to: /home/CPU2017
  Filesystem           Type  Size  Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs   819G  213G  607G  26% /home

---------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:        IEI
    Product:       NF5280M7
```

(Continued on next page)

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Platform Notes (Continued)

```
      Product Family: Not specified
      Serial:         000000000


    ------------------------------------------------------------
 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:
     16x Samsung M321R4GA3BB6-CQKVG 32 GB 2 rank 4800



    ------------------------------------------------------------
 23. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:      American Megatrends International, LLC.
    BIOS Version:     03.01.00
    BIOS Date:        12/29/2022
```

Compiler Version Notes

```
==============================================================================
C               | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(base, peak)
------------------------------------------------------------------------------
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, peak)
------------------------------------------------------------------------------
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, peak) 649.fotonik3d_s(base, peak) 654.roms_s(base, peak)
------------------------------------------------------------------------------
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, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)
------------------------------------------------------------------------------
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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 -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`

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SPEC CPU®2017 Floating Point Speed Result

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IEIT Systems Co., Ltd.

SPECspeed®2017_fp_base = 179

NF5280M7 (Intel Xeon Silver 4410Y)

SPECspeed®2017_fp_peak = 179

CPU2017 License: 3358　　　　　　　　　　　　　　　　　　　**Test Date:** Oct-2023
Test Sponsor: IEIT Systems Co., Ltd.　　　　　　　　　**Hardware Availability:** Apr-2023
Tested by: IEIT Systems Co., Ltd.　　　　　　　　　　**Software Availability:** Dec-2022

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
```
-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
```

Peak 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
```

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

619.lbm_s: `basepeak = yes`

638.imagick_s: `basepeak = yes`

(Continued on next page)

IEIT Systems Co., Ltd.

SPECspeed®2017_fp_base = 179

NF5280M7 (Intel Xeon Silver 4410Y)

SPECspeed®2017_fp_peak = 179

CPU2017 License: 3358
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Test Date: Oct-2023
Hardware Availability: Apr-2023
Software Availability: Dec-2022

Peak Optimization Flags (Continued)

644.nab_s: `basepeak = yes`

Fortran benchmarks:

603.bwaves_s: `basepeak = yes`

649.fotonik3d_s: `basepeak = yes`

654.roms_s: `basepeak = yes`

Benchmarks using both Fortran and C:

621.wrf_s: `basepeak = yes`

627.cam4_s: `basepeak = yes`

628.pop2_s: `basepeak = yes`

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: `basepeak = yes`

The flags files that were used to format this result can be browsed at
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html`
`http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-intel-V3.4.html`

You can also download the XML flags sources by saving the following links:
`http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml`
`http://www.spec.org/cpu2017/flags/Inspur-Platform-Settings-intel-V3.4.xml`

For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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