SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

xFusion

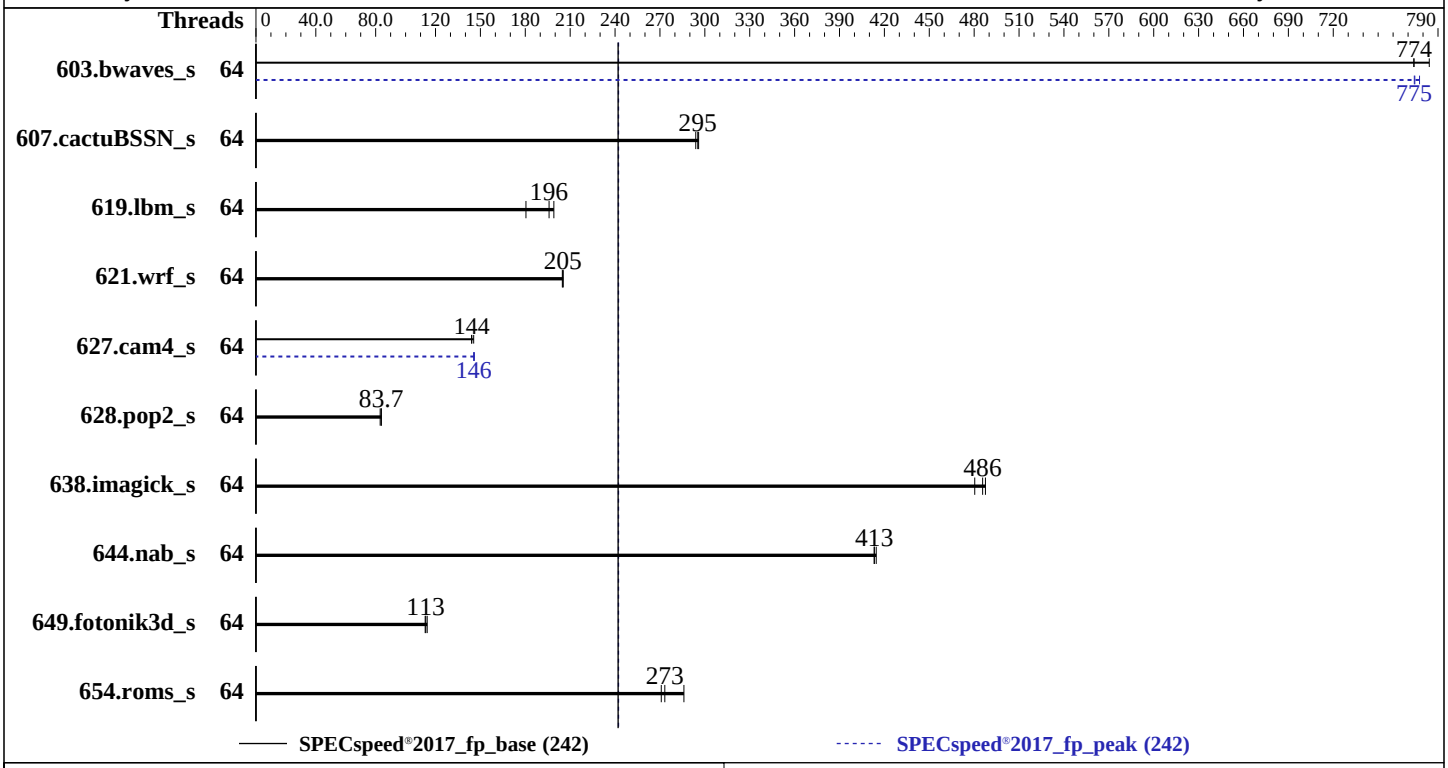
xFusion 2288H V6 (Intel Xeon Gold 6338)

SPECspeed®2017_fp_base = 242

SPECspeed®2017_fp_peak = 242

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

Test Date: Jun-2023
Hardware Availability: Apr-2021
Software Availability: Dec-2022



Hardware

CPU Name:	Intel Xeon Gold 6338
Max MHz:	3200
Nominal:	2000
Enabled:	64 cores, 2 chips
Orderable:	1,2 chips
Cache L1:	32 KB I + 48 KB D on chip per core
L2:	1.25 MB I+D on chip per core
L3:	48 MB I+D on chip per chip
Other:	None
Memory:	512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R)
Storage:	1 x 960 GB SATA SSD
Other:	None

Software

OS:	Red Hat Enterprise Linux 8.4 (Ootpa) 4.18.0-305.el8.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 1.55 Released May-2023
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 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	64	75.2	784	76.2	774	**76.2**	**774**	64	75.9	778	**76.2**	**775**	76.2	774
607.cactuBSSN_s	64	56.7	294	56.3	296	**56.5**	**295**	64	56.7	294	56.3	296	**56.5**	**295**
619.lbm_s	64	26.3	199	**26.7**	**196**	29.0	180	64	26.3	199	**26.7**	**196**	29.0	180
621.wrf_s	64	64.4	205	64.6	205	**64.5**	**205**	64	64.4	205	64.6	205	**64.5**	**205**
627.cam4_s	64	**61.4**	**144**	61.5	144	60.9	146	64	60.7	146	**60.9**	**146**	60.9	146
628.pop2_s	64	143	83.0	142	83.8	**142**	**83.7**	64	143	83.0	142	83.8	**142**	**83.7**
638.imagick_s	64	**29.7**	**486**	29.6	488	30.0	480	64	**29.7**	**486**	29.6	488	30.0	480
644.nab_s	64	42.1	415	**42.3**	**413**	42.3	413	64	42.1	415	**42.3**	**413**	42.3	413
649.fotonik3d_s	64	79.7	114	**80.3**	**113**	80.6	113	64	79.7	114	**80.3**	**113**	80.6	113
654.roms_s	64	55.0	286	**57.6**	**273**	58.1	271	64	55.0	286	**57.6**	**273**	58.1	271

SPECspeed®2017_fp_base = 242

SPECspeed®2017_fp_peak = 242

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 = "/spec2017-icc2023.0/lib/intel64:/spec2017-icc2023.0/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:
Performance Profile Set to Load Balance
Hyper-Threading Set to Disabled

Sysinfo program /spec2017-icc2023.0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Mon Jun 19 19:37:50 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 239 (239-45.el8)
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. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
21. Disk information
22. /sys/devices/virtual/dmi/id
23. dmidecode
24. BIOS
------------------------------------------------------------

------------------------------------------------------------
1. uname -a
  Linux localhost.localdomain 4.18.0-305.el8.x86_64 #1 SMP Thu Apr 29 08:54:30 EDT 2021 x86_64 x86_64 x86_64
  GNU/Linux

------------------------------------------------------------
2. w
   19:37:50 up  4:03,  1 user,  load average: 4.97, 5.61, 3.37
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                15:35    4:01m  1.25s  0.01s -bash

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

------------------------------------------------------------
4. ulimit -a
  core file size          (blocks, -c) 0
  data seg size           (kbytes, -d) unlimited
  scheduling priority             (-e) 0
  file size               (blocks, -f) unlimited
```

(Continued on next page)

Platform Notes (Continued)

```
   pending signals                 (-i) 2060571
   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) 2060571
   virtual memory          (kbytes, -v) unlimited
   file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 17
 login -- root
 -bash
 -bash
 runcpu --define default-platform-flags -c ic2023.0-lin-core-avx512-speed-20221201.cfg --define cores=64
   --tune base,peak -o all --define drop_caches fpspeed
 runcpu --define default-platform-flags --configfile ic2023.0-lin-core-avx512-speed-20221201.cfg --define
   cores=64 --tune base,peak --output_format all --define drop_caches --nopower --runmode speed --tune
   base:peak --size refspeed fpspeed --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.026/templogs/preenv.fpspeed.026.0.log --lognum 026.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /spec2017-icc2023.0

------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 106
    stepping        : 6
    microcode       : 0xd000363
    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 2.32.1:
  Architecture:        x86_64
  CPU op-mode(s):      32-bit, 64-bit
  Byte Order:          Little Endian
  CPU(s):              64
  On-line CPU(s) list: 0-63
```

(Continued on next page)

Platform Notes (Continued)

```
  Thread(s) per core:  1
  Core(s) per socket:  32
  Socket(s):           2
  NUMA node(s):        2
  Vendor ID:           GenuineIntel
  BIOS Vendor ID:      Intel(R) Corporation
  CPU family:          6
  Model:               106
  Model name:          Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
  BIOS Model name:     Intel(R) Xeon(R) Gold 6338 CPU @ 2.00GHz
  Stepping:            6
  CPU MHz:             1053.615
  CPU max MHz:         2001.0000
  CPU min MHz:         800.0000
  BogoMIPS:            4000.00
  Virtualization:      VT-x
  L1d cache:           48K
  L1i cache:           32K
  L2 cache:            1280K
  L3 cache:            49152K
  NUMA node0 CPU(s):   0-31
  NUMA node1 CPU(s):   32-63
  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 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 invpcid_single 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 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 wbnoinvd
                       dtherm ida arat pln pts avx512vbmi umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq
                       avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid fsrm md_clear pconfig
                       flush_l1d arch_capabilities

------------------------------------------------------------
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: 257140 MB
  node 0 free: 252564 MB
  node 1 cpus: 32-63
  node 1 size: 258038 MB
  node 1 free: 254355 MB
  node distances:
  node   0   1
    0:  10  20
    1:  20  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       527543648 kB

------------------------------------------------------------
10. who -r
  run-level 3 Jun 19 15:34

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

(Continued on next page)

Platform Notes (Continued)

```
11. Systemd service manager version: systemd 239 (239-45.el8)
  Default Target  Status
  multi-user      running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE      UNIT FILES
  enabled    NetworkManager NetworkManager-dispatcher NetworkManager-wait-online atd auditd autovt@ chronyd
             crond firewalld getty@ import-state irqbalance iscsi iscsi-onboot kdump libstoragemgmt
             loadmodules lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname
             nvmefc-boot-connections rhsmcertd rsyslog selinux-autorelabel-mark smartd sshd sssd syslog
             sysstat timedatex tuned udisks2 vdo
  disabled   arp-ethers blk-availability chrony-wait console-getty cpupower debug-shell ebtables iprdump
             iprinit iprupdate ipsec iscsid iscsiuio kpatch kvm_stat ledmon nftables nvmf-autoconnect oddjobd
             psacct rdisc rhcd rhsm rhsm-facts serial-getty@ sshd-keygen@ systemd-resolved tcsd
  generated  SystemTap compile-server gcc-toolset-10-stap-server gcc-toolset-10-systemtap
             gcc-toolset-9-stap-server gcc-toolset-9-systemtap scripts startup
  indirect   sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
  masked     systemd-timedated

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=(hd0,gpt3)/boot/vmlinuz-4.18.0-305.el8.x86_64
  root=UUID=711de346-1631-4b60-a626-37488271d525
  ro
  crashkernel=auto
  resume=UUID=d6a3ac10-1ea1-4e42-a80b-54c427bcad19
  rhgb
  quiet

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 0:
    current policy: frequency should be within 800 MHz and 2.00 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. tuned-adm active
  No current active profile.

------------------------------------------------------------
16. sysctl
  kernel.numa_balancing               1
  kernel.randomize_va_space           2
  vm.compaction_proactiveness         0
  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
```

(Continued on next page)

Platform Notes (Continued)

```
  vm.nr_overcommit_hugepages          0
  vm.swappiness                      60
  vm.watermark_boost_factor       15000
  vm.watermark_scale_factor          10
  vm.zone_reclaim_mode                0

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

------------------------------------------------------------
18. /sys/kernel/mm/transparent_hugepage/khugepaged
  alloc_sleep_millisecs   60000
  defrag                      1
  max_ptes_none             511
  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 8.4 (Ootpa)
  redhat-release Red Hat Enterprise Linux release 8.4 (Ootpa)
  system-release Red Hat Enterprise Linux release 8.4 (Ootpa)

------------------------------------------------------------
20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
  itlb_multihit        Not affected
  l1tf                 Not affected
  mds                  Not affected
  meltdown             Not affected
  spec_store_bypass    Mitigation: Speculative Store Bypass disabled via prctl and seccomp
  spectre_v1           Mitigation: usercopy/swapgs barriers and __user pointer sanitization
  spectre_v2           Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
  srbds                Not affected
  tsx_async_abort      Not affected
For more information, see the Linux documentation on hardware vulnerabilities, for example
     https://www.kernel.org/doc/html/latest/admin-guide/hw-vuln/index.html

------------------------------------------------------------
21. Disk information
SPEC is set to: /spec2017-icc2023.0
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda3      xfs   420G   42G  378G  10% /

------------------------------------------------------------
22. /sys/devices/virtual/dmi/id
    Vendor:         XFUSION
    Product:        2288H V6
    Product Family: Whitley
    Serial:         Serial

------------------------------------------------------------
23. 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)

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:
     16x Samsung M393A4K40DB3-CWE 32 GB 2 rank 3200


 ------------------------------------------------------------
 24. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       XFUSION
    BIOS Version:      1.55
    BIOS Date:         05/09/2023
    BIOS Revision:     1.55
```

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

Base Compiler Invocation

C benchmarks:
icx

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Base Compiler Invocation (Continued)

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
-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

(Continued on next page)

Base Optimization Flags (Continued)

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`

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`

644.nab_s: `basepeak = yes`

Fortran benchmarks:

(Continued on next page)

Peak Optimization Flags (Continued)

603.bwaves_s: `-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`

649.fotonik3d_s: `basepeak = yes`

654.roms_s: `basepeak = yes`

Benchmarks using both Fortran and C:

621.wrf_s: `basepeak = yes`

627.cam4_s: `-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`

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/xFusion-Platform-Settings-ICX-V1.2.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/xFusion-Platform-Settings-ICX-V1.2.xml`

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