



# SPEC CPU®2017 Floating Point Speed Result

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## xFusion

SPECspeed®2017\_fp\_base = 240

xFusion 5288 V6 (Intel Xeon Platinum 8352V)

SPECspeed®2017\_fp\_peak = 241

CPU2017 License: 6488

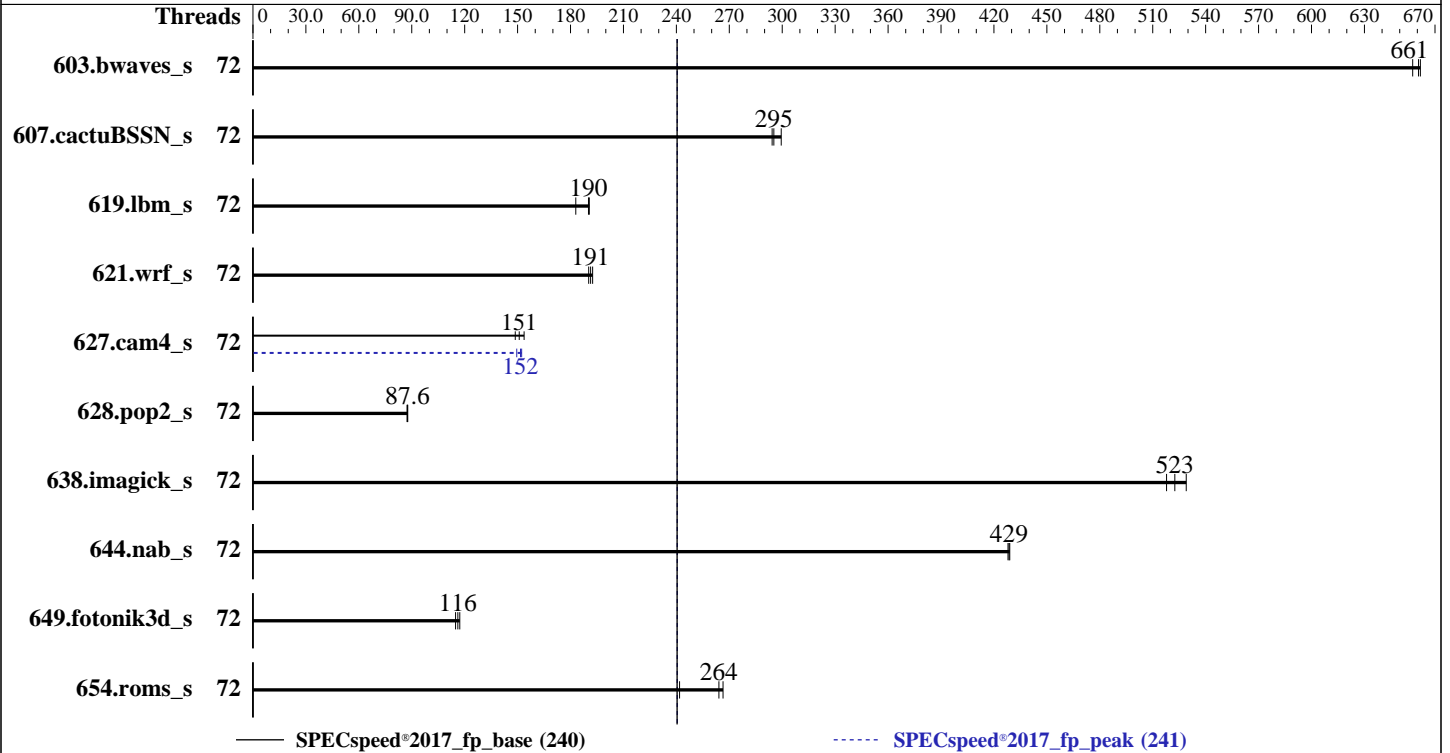
Test Sponsor: xFusion

Tested by: xFusion

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022



### Hardware

CPU Name: Intel Xeon Platinum 8352V  
 Max MHz: 3500  
 Nominal: 2100  
 Enabled: 72 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: 54 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx4 PC4-3200AA-R, running at 2933)  
 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 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;  
 Parallel: Yes  
 Firmware: Version 1.35 Released Feb-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: 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	72	<b>89.3</b>	<b>661</b>	89.2	662	89.8	657	72	<b>89.3</b>	<b>661</b>	89.2	662	89.8	657
607.cactuBSSN_s	72	<b>56.5</b>	<b>295</b>	55.7	299	56.6	294	72	<b>56.5</b>	<b>295</b>	55.7	299	56.6	294
619.lbm_s	72	28.6	183	27.5	191	<b>27.5</b>	<b>190</b>	72	28.6	183	27.5	191	<b>27.5</b>	<b>190</b>
621.wrf_s	72	<b>69.1</b>	<b>191</b>	68.7	193	69.5	190	72	<b>69.1</b>	<b>191</b>	68.7	193	69.5	190
627.cam4_s	72	57.7	154	59.6	149	<b>58.7</b>	<b>151</b>	72	59.3	150	58.2	152	<b>58.4</b>	<b>152</b>
628.pop2_s	72	<b>135</b>	<b>87.6</b>	135	87.7	136	87.3	72	<b>135</b>	<b>87.6</b>	135	87.7	136	87.3
638.imagick_s	72	27.9	518	<b>27.6</b>	<b>523</b>	27.3	529	72	27.9	518	<b>27.6</b>	<b>523</b>	27.3	529
644.nab_s	72	<b>40.8</b>	<b>429</b>	40.8	428	40.7	429	72	<b>40.8</b>	<b>429</b>	40.8	428	40.7	429
649.fotonik3d_s	72	<b>78.5</b>	<b>116</b>	79.4	115	77.8	117	72	<b>78.5</b>	<b>116</b>	79.4	115	77.8	117
654.roms_s	72	<b>59.6</b>	<b>264</b>	59.1	266	65.1	242	72	<b>59.6</b>	<b>264</b>	59.1	266	65.1	242

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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\_1.19/lib/intel64:/spec2017\_1.19/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

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### General Notes (Continued)

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\_1.19/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Wed Mar 22 10:45:26 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

(Continued on next page)



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### Platform Notes (Continued)

GNU/Linux

```

-----
2. w
  10:45:26 up  4:06,  1 user,  load average:  5.51,  6.04,  3.59
USER      TTY      FROM          LOGIN@      IDLE        JCPU      PCPU      WHAT
root      tty1     -             06:59       3:45m      1.09s     0.00s     -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
  pending signals         (-i) 2060059
  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) 2060059
  virtual memory          (kbytes, -v) unlimited
  file locks              (-x) unlimited

```

```

-----
5. sysinfo process ancestry
  /usr/lib/systemd/systemd --switched-root --system --deserialize 18
  login -- root
  -bash
  -bash
  runcpu --define default-platform-flags -c ic2022.1-lin-core-avx512-speed-20220316.cfg --define cores=72
    --tune base,peak -o all --define drop_caches fpspeed
  runcpu --define default-platform-flags --configfile ic2022.1-lin-core-avx512-speed-20220316.cfg --define
    cores=72 --tune base,peak --output_format all --define drop_caches --nopower --runmode speed --tune
    base:peak --size refspeed fpspeed --nopreenv --note-preenv --logfile
    $SPEC/tmp/CPU2017.029/templogs/preenv.fpspeed.029.0.log --lognum 029.0 --from_runcpu 2
  specperl $SPEC/bin/sysinfo
  $SPEC = /spec2017_1.19

```

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### Platform Notes (Continued)

```

6. /proc/cpuinfo
   model name      : Intel(R) Xeon(R) Platinum 8352V CPU @ 2.10GHz
   vendor_id       : GenuineIntel
   cpu family      : 6
   model           : 106
   stepping        : 6
   microcode       : 0xd000363
   bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
   cpu cores       : 36
   siblings        : 36
   2 physical ids (chips)
   72 processors (hardware threads)
   physical id 0: core ids 0-35
   physical id 1: core ids 0-35
   physical id 0: apicids
   0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58,60,62,64,66,68,70
   physical id 1: apicids
   128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174,176,178,180,182,184,186,188,190,192,194,196,198
   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):            72
On-line CPU(s) list: 0-71
Thread(s) per core: 1
Core(s) per socket: 36
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) Platinum 8352V CPU @ 2.10GHz
BIOS Model name:   Intel(R) Xeon(R) Platinum 8352V CPU @ 2.10GHz
Stepping:         6
CPU MHz:          2274.838
CPU max MHz:       2101.0000
CPU min MHz:       800.0000
BogoMIPS:          4200.00
Virtualization:    VT-x

```

(Continued on next page)



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### Platform Notes (Continued)

L1d cache: 48K  
L1i cache: 32K  
L2 cache: 1280K  
L3 cache: 55296K  
NUMA node0 CPU(s): 0-35  
NUMA node1 CPU(s): 36-71

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\_lld 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: 0-35
node 0 size: 257013 MB
node 0 free: 256011 MB
node 1 cpus: 36-71
node 1 size: 258037 MB
node 1 free: 256736 MB
node distances:
node  0  1
  0:  10  20
  1:  20  10
```

9. /proc/meminfo

MemTotal: 527412840 kB

10. who -r

run-level 3 Mar 22 06:39

11. Systemd service manager version: systemd 239 (239-45.el8)

```
Default Target Status
multi-user      running
```

(Continued on next page)



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### Platform Notes (Continued)

-----  
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 nvme-fc-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 ebttables httpd httpd@ iprdump iprinit iprupdate ipsec iscsid iscsiuiop kpatch kvm_stat ledmon nftables nvme-f-autoconnect oddjobd phoromatic-client phoromatic-server phoronix-result-server php-fpm pmcd pmfind pmie pmie_check pmlogger pmlogger_check pmproxy psacct rdisc rhcd rhsm rhsm-facts serial-getty@ snmpd snmptrapd 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 mst 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=9304e5cd-2e1d-48f6-9359-484ddf980c8a
ro
crashkernel=auto
resume=UUID=aff4e6f4-0757-4e74-b0fd-4e11814d5ccb
rhgb
quiet
```

-----  
14. cpupower frequency-info

```
analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 2.10 GHz.
                   The governor "performance" may decide which speed to use
                   within this range.
  boost state support:
    Supported: yes
    Active: yes
```

-----  
15. tuned-adm active

```
Current active profile: throughput-performance
```

-----  
16. sysctl

```
kernel.numa_balancing          1
kernel.randomize_va_space      2
```

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### Platform Notes (Continued)

```

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                   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+advise [advise] never
enabled         [always] advise 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
lltf                Not affected
mds                 Not affected
meltdown            Not affected

```

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### Platform Notes (Continued)

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
srbsds	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\_1.19

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda3	xfs	859G	117G	743G	14%	/

-----  
22. /sys/devices/virtual/dmi/id

Vendor:	XFUSION
Product:	5288 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 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, configured at 2933

-----  
24. BIOS

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

BIOS Vendor:	XFUSION
BIOS Version:	1.35
BIOS Date:	02/14/2023
BIOS Revision:	1.35

### 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,

(Continued on next page)



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### Compiler Version Notes (Continued)

Version 2022.1.0 Build 20220316  
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 2022.1.0 Build 20220316  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2022.1.0 Build 20220316  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.  
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version  
2022.1.0 Build 20220316  
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  
2022.1.0 Build 20220316  
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  
2022.1.0 Build 20220316  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,  
Version 2022.1.0 Build 20220316  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

### Base Compiler Invocation

C benchmarks:  
icx

Fortran benchmarks:  
ifx

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Tested by: xFusion

Test Date: Mar-2023  
Hardware Availability: Apr-2021  
Software Availability: May-2022

## 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:

```
-m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -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 -nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

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**xFusion**

SPECspeed®2017\_fp\_base = 240

xFusion 5288 V6 (Intel Xeon Platinum 8352V)

SPECspeed®2017\_fp\_peak = 241

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

**Test Date:** Mar-2023  
**Hardware Availability:** Apr-2021  
**Software Availability:** May-2022

## Base Optimization Flags (Continued)

Benchmarks using Fortran, C, 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 -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:

603.bwaves\_s: basepeak = yes

649.fotonik3d\_s: basepeak = yes

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

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## xFusion

SPECspeed®2017\_fp\_base = 240

xFusion 5288 V6 (Intel Xeon Platinum 8352V)

SPECspeed®2017\_fp\_peak = 241

CPU2017 License: 6488

Test Sponsor: xFusion

Tested by: xFusion

Test Date: Mar-2023

Hardware Availability: Apr-2021

Software Availability: May-2022

## Peak Optimization Flags (Continued)

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
-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-ic2022-official-linux64\\_revA.html](http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.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-ic2022-official-linux64\\_revA.xml](http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.xml)

<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-ICX-V1.2.xml>

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