



# SPEC CPU®2017 Floating Point Speed Result

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## xFusion

SPECspeed®2017\_fp\_base = 319

FusionServer 1288H V7 (Intel Xeon Gold 5520+)

SPECspeed®2017\_fp\_peak = 319

CPU2017 License: 6488

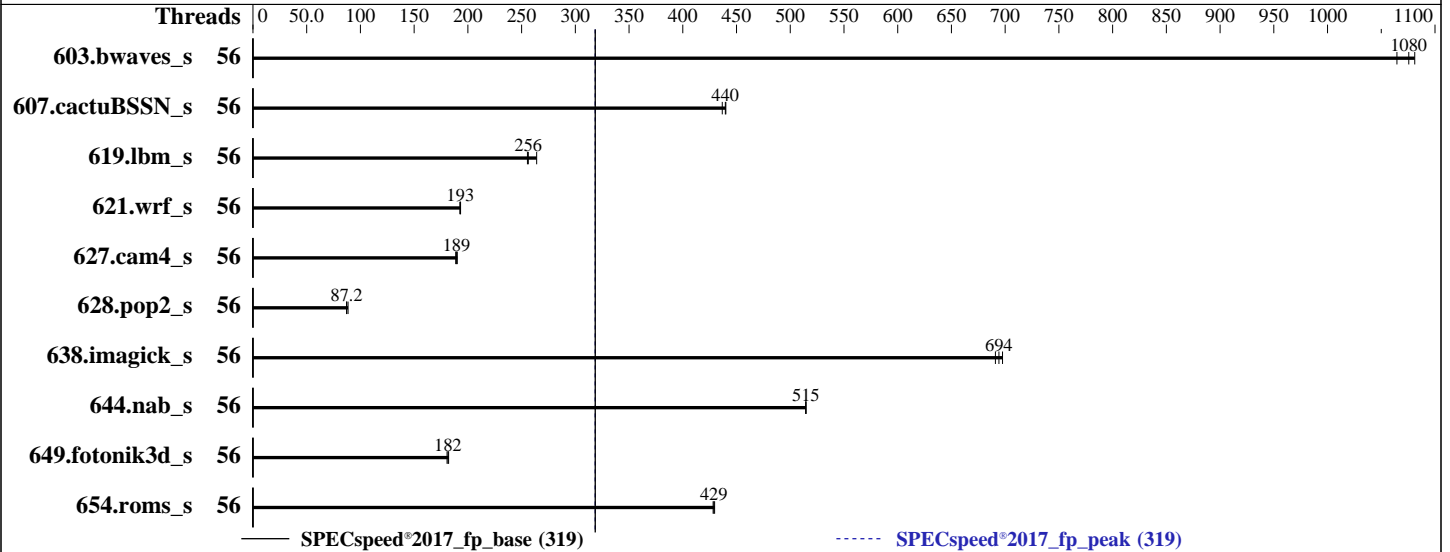
Test Sponsor: xFusion

Tested by: xFusion

Test Date: May-2024

Hardware Availability: Dec-2023

Software Availability: Dec-2023



### Hardware

CPU Name: Intel Xeon Gold 5520+  
 Max MHz: 4000  
 Nominal: 2200  
 Enabled: 56 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: 52.5 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx8 PC5-5600B-R, running at 4800)  
 Storage: 1 x 960 GB SATA SSD  
 Other: CPU Cooling: Air

### Software

OS: Red Hat Enterprise Linux 9.2 (Plow)  
 5.14.0-284.11.1.el9\_2.x86\_64  
 Compiler: C/C++: Version 2024.0.2 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2024.0.2 of Intel Fortran Compiler for Linux;  
 Parallel: Yes  
 Firmware: Version 01.01.03.05 Released Apr-2024  
 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	56	54.6	1080	55.4	1060	<b><u>54.9</u></b>	<b><u>1080</u></b>	56	54.6	1080	55.4	1060	<b><u>54.9</u></b>	<b><u>1080</u></b>
607.cactuBSSN_s	56	38.2	437	<b><u>37.9</u></b>	<b><u>440</u></b>	37.9	440	56	38.2	437	<b><u>37.9</u></b>	<b><u>440</u></b>	37.9	440
619.lbm_s	56	19.8	264	20.5	255	<b><u>20.4</u></b>	<b><u>256</u></b>	56	19.8	264	20.5	255	<b><u>20.4</u></b>	<b><u>256</u></b>
621.wrf_s	56	68.7	193	68.5	193	<b><u>68.5</u></b>	<b><u>193</u></b>	56	68.7	193	68.5	193	<b><u>68.5</u></b>	<b><u>193</u></b>
627.cam4_s	56	47.0	189	46.6	190	<b><u>46.8</u></b>	<b><u>189</u></b>	56	47.0	189	46.6	190	<b><u>46.8</u></b>	<b><u>189</u></b>
628.pop2_s	56	<b><u>136</u></b>	<b><u>87.2</u></b>	134	88.5	136	87.1	56	<b><u>136</u></b>	<b><u>87.2</u></b>	134	88.5	136	87.1
638.imagick_s	56	<b><u>20.8</u></b>	<b><u>694</u></b>	20.9	691	20.7	698	56	<b><u>20.8</u></b>	<b><u>694</u></b>	20.9	691	20.7	698
644.nab_s	56	<b><u>34.0</u></b>	<b><u>515</u></b>	33.9	515	34.0	514	56	<b><u>34.0</u></b>	<b><u>515</u></b>	33.9	515	34.0	514
649.fotonik3d_s	56	50.1	182	<b><u>50.2</u></b>	<b><u>182</u></b>	50.5	181	56	50.1	182	<b><u>50.2</u></b>	<b><u>182</u></b>	50.5	181
654.roms_s	56	<b><u>36.7</u></b>	<b><u>429</u></b>	36.8	428	36.6	430	56	<b><u>36.7</u></b>	<b><u>429</u></b>	36.8	428	36.6	430

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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"  
Kernel Boot Parameter set with : nohz\_full=1-55

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact"  
LD\_LIBRARY\_PATH = "/home/cpu2017\_2024/lib/intel64:/home/cpu2017\_2024/je5.0.1-64"  
MALLOCONF = "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

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### Platform Notes (Continued)

Enable LP [Global] Set to Single LP  
ADDDC Sparing Set to Disabled

Sysinfo program /home/cpu2017\_2024/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Wed May 29 15:42:45 2024

SUT (System Under Test) info as seen by some common utilities.

-----  
Table of contents  
-----

- 1. uname -a
- 2. w
- 3. Username
- 4. ulimit -a
- 5. sysinfo process ancestry
- 6. /proc/cpuinfo
- 7. lscpu
- 8. numactl --hardware
- 9. /proc/meminfo
- 10. who -r
- 11. Systemd service manager version: systemd 252 (252-13.e19\_2)
- 12. Failed units, from systemctl list-units --state=failed
- 13. Services, from systemctl list-unit-files
- 14. Linux kernel boot-time arguments, from /proc/cmdline
- 15. cpupower frequency-info
- 16. tuned-adm active
- 17. sysctl
- 18. /sys/kernel/mm/transparent\_hugepage
- 19. /sys/kernel/mm/transparent\_hugepage/khugepaged
- 20. OS release
- 21. Disk information
- 22. /sys/devices/virtual/dmi/id
- 23. dmidecode
- 24. BIOS

-----  
1. uname -a  
Linux localhost.localdomain 5.14.0-284.11.1.e19\_2.x86\_64 #1 SMP PREEMPT\_DYNAMIC Wed Apr 12 10:45:03 EDT 2023 x86\_64 x86\_64 x86\_64 GNU/Linux  
-----

2. w  
15:42:45 up 3:09, 1 user, load average: 5.64, 5.37, 3.26  
USER TTY LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 12:33 3:07m 0.84s 0.13s -bash  
-----

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

4. ulimit -a  
real-time non-blocking time (microseconds, -R) unlimited  
core file size (blocks, -c) 0  
data seg size (kbytes, -d) unlimited  
scheduling priority (-e) 0  
file size (blocks, -f) unlimited  
-----

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### Platform Notes (Continued)

```

pending signals                (-i) 2060234
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) 2060234
virtual memory                 (kbytes, -v) unlimited
file locks                    (-x) unlimited

```

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 31
login -- root
-bash
sh run_speed.sh
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2024.0.2-lin-sapphirerapids-speed-20231213.cfg --define cores=56 --tune base,peak -o all --define
  drop_caches fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2024.0.2-lin-sapphirerapids-speed-20231213.cfg --define cores=56 --tune base,peak --output_format all
  --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed --nopreenv
  --note-preenv --logfile $SPEC/tmp/CPU2017.002/templogs/preenv.fpspeed.002.0.log --lognum 002.0
  --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017_2024

```

```

-----
6. /proc/cpuinfo
model name      : INTEL(R) XEON(R) GOLD 5520+
vendor_id      : GenuineIntel
cpu family     : 6
model          : 207
stepping      : 2
microcode     : 0x21000200
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
cpu cores     : 28
siblings      : 28
2 physical ids (chips)
56 processors (hardware threads)
physical id 0: core ids 0-27
physical id 1: core ids 0-27
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
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
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:     46 bits physical, 57 bits virtual
Byte Order:       Little Endian

```

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### Platform Notes (Continued)

```

CPU(s): 56
On-line CPU(s) list: 0-55
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel(R) Corporation
Model name: INTEL(R) XEON(R) GOLD 5520+
BIOS Model name: INTEL(R) XEON(R) GOLD 5520+
CPU family: 6
Model: 207
Thread(s) per core: 1
Core(s) per socket: 28
Socket(s): 2
Stepping: 2
Frequency boost: enabled
CPU max MHz: 2201.0000
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 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 cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
vmmi 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 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 ibt amx_bf16
avx512_fp16 amx_tile amx_int8 flush_1ld arch_capabilities

Virtualization: VT-x
L1d cache: 2.6 MiB (56 instances)
L1i cache: 1.8 MiB (56 instances)
L2 cache: 112 MiB (56 instances)
L3 cache: 105 MiB (2 instances)
NUMA node(s): 2
NUMA node0 CPU(s): 0-27
NUMA node1 CPU(s): 28-55
Vulnerability Itlb multihit: Not affected
Vulnerability Lltf: 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
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling, PBRSE-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	2.6M	12	Data	1	64	1	64
L1i	32K	1.8M	8	Instruction	1	64	1	64
L2	2M	112M	16	Unified	2	2048	1	64
L3	52.5M	105M	15	Unified	3	57344	1	64

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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: 0-27
node 0 size: 257060 MB
node 0 free: 256402 MB
node 1 cpus: 28-55
node 1 size: 258036 MB
node 1 free: 256547 MB
node distances:
node 0 1
0: 10 21
1: 21 10
```

9. /proc/meminfo

```
MemTotal: 527459648 kB
```

10. who -r

```
run-level 3 May 29 12:33
```

11. Systemd service manager version: systemd 252 (252-13.el9\_2)

```
Default Target Status
multi-user degraded
```

12. Failed units, from systemctl list-units --state=failed

```
UNIT LOAD ACTIVE SUB DESCRIPTION
* sep5.service loaded failed failed systemd script to load sep5 driver at boot time
```

13. Services, from systemctl list-unit-files

```
STATE UNIT FILES
enabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
dbus-broker firewalld getty@ insights-client-boot irqbalance kdump low-memory-monitor
mdmonitor microcode nis-domainname rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark
sep5 sshd sssd sysstat systemd-boot-update systemd-network-generator tuned udisks2 upower

enabled-runtime systemd-remount-fs
disabled canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot
chrony-wait console-getty cpupower debug-shell dnf-system-upgrade kvm_stat
man-db-restart-cache-update nftables pesign rdisc rhcd rhsm rhsm-facts rpmdb-rebuild
selinux-check-proper-disable serial-getty@ sshd-keygen@ systemd-boot-check-no-failures
systemd-pstore systemd-sysext

indirect sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo systemd-sysupdate
systemd-sysupdate-reboot
```

14. Linux kernel boot-time arguments, from /proc/cmdline

```
BOOT_IMAGE=(hd0,gpt5)/boot/vmlinuz-5.14.0-284.11.1.el9_2.x86_64
root=UUID=e7cclb7d-5946-4ed4-8306-b2d382dc5709
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=UUID=937c2e4e-930c-4489-9a6c-cd05c9a2c08a
nohz_full=1-55
```

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### Platform Notes (Continued)

```

15. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 2.20 GHz.
                   The governor "performance" may decide which speed to use
                   within this range.
  boost state support:
    Supported: yes
    Active: yes

```

```

-----
16. tuned-adm active
  Current active profile: throughput-performance

```

```

-----
17. 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

```

```

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

```

```

-----
19. /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

```

```

-----
20. OS release
From /etc/*-release /etc/*-version
os-release      Red Hat Enterprise Linux 9.2 (Plow)
redhat-release Red Hat Enterprise Linux release 9.2 (Plow)
system-release Red Hat Enterprise Linux release 9.2 (Plow)

```

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### Platform Notes (Continued)

#### 21. Disk information

SPEC is set to: /home/cpu2017\_2024

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/sda5	xf	690G	121G	570G	18%	/

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

Product: 1288H V7  
Product Family: Eagle Stream

#### 23. 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:

6x Samsung M321R4GA3PB0-CWMCH 32 GB 2 rank 5600, configured at 4800  
8x Samsung M321R4GA3PB0-CWMJH 32 GB 2 rank 5600, configured at 4800  
2x Samsung M321R4GA3PB0-CWMKH 32 GB 2 rank 5600, configured at 4800

#### 24. BIOS

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

BIOS Vendor: INSYDE Corp.  
BIOS Version: 01.01.03.05  
BIOS Date: 04/12/2024  
BIOS Revision: 3.5

### 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 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 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 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 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 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 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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**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** May-2024  
**Hardware Availability:** Dec-2023  
**Software Availability:** Dec-2023

## Compiler Version Notes (Continued)

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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.0.2 Build 20231213  
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 -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

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

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## xFusion

SPECspeed®2017\_fp\_base = 319

FusionServer 1288H V7 (Intel Xeon Gold 5520+)

SPECspeed®2017\_fp\_peak = 319

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

**Test Date:** May-2024  
**Hardware Availability:** Dec-2023  
**Software Availability:** Dec-2023

## Base Optimization Flags (Continued)

Fortran benchmarks:

```
-w -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:

```
-w -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
-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 -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



# SPEC CPU®2017 Floating Point Speed Result

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## xFusion

SPECspeed®2017\_fp\_base = 319

FusionServer 1288H V7 (Intel Xeon Gold 5520+)

SPECspeed®2017\_fp\_peak = 319

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

**Test Date:** May-2024  
**Hardware Availability:** Dec-2023  
**Software Availability:** Dec-2023

## 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

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-ic2024-official-linux64.html>

<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-EMR-V1.0.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/xFusion-Platform-Settings-EMR-V1.0.xml>

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