



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

CPU2017 License: 6488

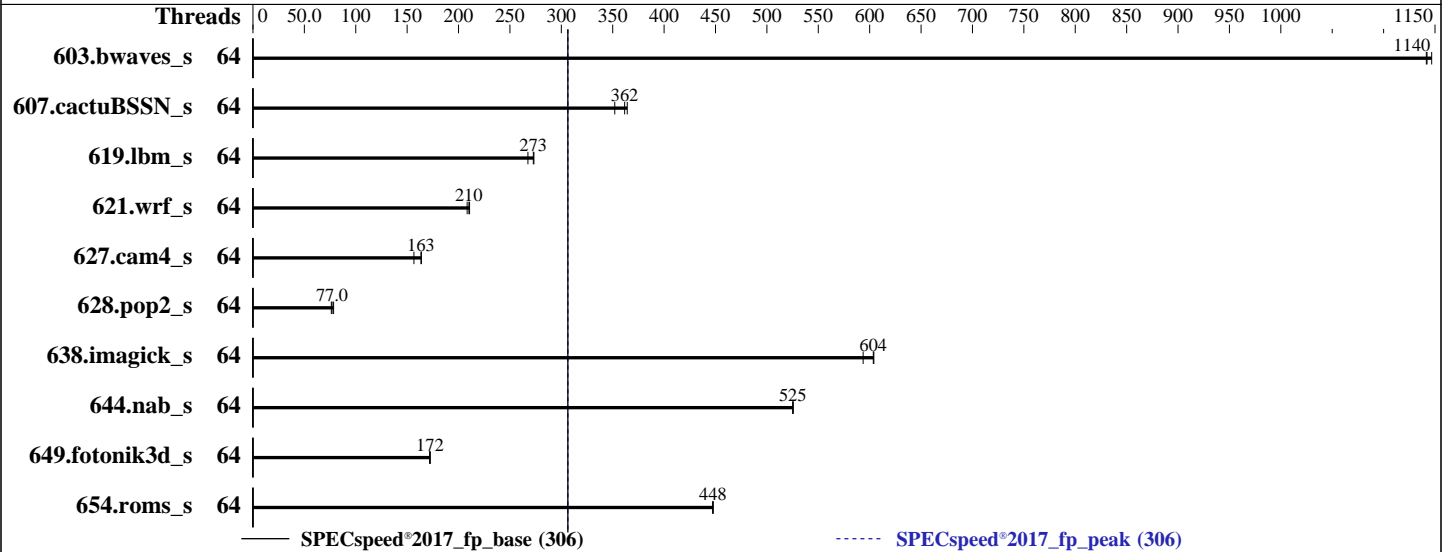
Test Sponsor: xFusion

Tested by: xFusion

Test Date: Aug-2023

Hardware Availability: Jan-2023

Software Availability: Dec-2022



### Hardware

CPU Name: Intel Xeon Gold 6454S  
 Max MHz: 3400  
 Nominal: 2200  
 Enabled: 64 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: 60 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)  
 Storage: 1 x 1920 GB SATA SSD  
 Other: None

### Software

OS: Red Hat Enterprise Linux release 9.0 (Plow)  
 5.14.0-70.13.1.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 2.00.55 Released Mar-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



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

Test Date: Aug-2023  
Hardware Availability: Jan-2023  
Software Availability: Dec-2022

## Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
603.bwaves_s	64	51.4	1150	51.7	1140	<u>51.7</u>	<u>1140</u>	64	51.4	1150	51.7	1140	<u>51.7</u>	<u>1140</u>
607.cactuBSSN_s	64	<u>46.1</u>	<u>362</u>	47.4	352	45.8	364	64	<u>46.1</u>	<u>362</u>	47.4	352	45.8	364
619.lbm_s	64	19.6	268	19.2	273	<u>19.2</u>	<u>273</u>	64	19.6	268	19.2	273	<u>19.2</u>	<u>273</u>
621.wrf_s	64	<u>63.0</u>	<u>210</u>	63.5	208	62.8	211	64	<u>63.0</u>	<u>210</u>	63.5	208	62.8	211
627.cam4_s	64	54.1	164	<u>54.2</u>	<u>163</u>	56.6	157	64	54.1	164	<u>54.2</u>	<u>163</u>	56.6	157
628.pop2_s	64	<u>154</u>	<u>77.0</u>	151	78.5	156	76.2	64	<u>154</u>	<u>77.0</u>	151	78.5	156	76.2
638.imagick_s	64	23.9	604	<u>23.9</u>	<u>604</u>	24.3	594	64	23.9	604	<u>23.9</u>	<u>604</u>	24.3	594
644.nab_s	64	33.3	525	<u>33.3</u>	<u>525</u>	33.2	526	64	33.3	525	<u>33.3</u>	<u>525</u>	33.2	526
649.fotonik3d_s	64	53.0	172	52.9	172	<u>52.9</u>	<u>172</u>	64	53.0	172	52.9	172	<u>52.9</u>	<u>172</u>
654.roms_s	64	35.2	448	<u>35.2</u>	<u>448</u>	35.2	447	64	35.2	448	<u>35.2</u>	<u>448</u>	35.2	447

SPECspeed®2017\_fp\_base = 306

SPECspeed®2017\_fp\_peak = 306

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 Red Hat Enterprise Linux 8.4  
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  
Enable LP [Global] Set to Single LP

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

## Platform Notes (Continued)

Sysinfo program /spec2017-icc2023.0/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Mon Aug 7 05:55:44 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.e19\_0)
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. 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.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64
x86_64 x86_64 GNU/Linux
```

```
2. w
05:55:44 up 1 min, 1 user, load average: 0.30, 0.19, 0.08
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
root     tty1      05:55   8.00s  1.06s  0.00s -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
pending signals (-i) 2060157
max locked memory (kbytes, -l) 64
max memory size (kbytes, -m) unlimited
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```

open files                (-n) 1024
pipe size                  (512 bytes, -p) 8
POSIX message queues      (bytes, -q) 819200
real-time priority        (-r) 0
stack size                 (kbytes, -s) unlimited
cpu time                   (seconds, -t) unlimited
max user processes        (-u) 2060157
virtual memory             (kbytes, -v) unlimited
file locks                 (-x) unlimited

```

#### 5. sysinfo process ancestry

```

/usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
login -- root
-bash
-bash
runcpu --define default-platform-flags -c ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=64
--tune base,peak --iterations 3 -o all --define drop_caches fpspeed
runcpu --define default-platform-flags --configfile ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define
cores=64 --tune base,peak --iterations 3 --output_format all --define drop_caches --nopower --runmode
speed --tune base:peak --size refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.126/templots/preenv.fpspeed.126.0.log --lognum 126.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /spec2017-icc2023.0

```

#### 6. /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) Gold 6454S
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping      : 6
microcode     : 0x2b000111
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapsg
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 2.37.4:
Architecture:      x86_64
CPU op-mode(s):    32-bit, 64-bit
Address sizes:      46 bits physical, 57 bits virtual
Byte Order:        Little Endian
CPU(s):            64
On-line CPU(s) list: 0-63
Vendor ID:         GenuineIntel
BIOS Vendor ID:    Intel(R) Corporation

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```

Model name: Intel(R) Xeon(R) Gold 6454S
BIOS Model name: Intel(R) Xeon(R) Gold 6454S
CPU family: 6
Model: 143
Thread(s) per core: 1
Core(s) per socket: 32
Socket(s): 2
Stepping: 6
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 rdtscpl
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology
nonstop_tsc cpuid aperfperf 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
xsavesopt xsaves xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
cqm_mbm_local split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida
arat pln pts avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes
vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid
bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear serialize
tsxldtrk pconfig arch_lbr avx512_fp16 amx_tile flush_lld arch_capabilities
VT-x

Virtualization:
L1d cache: 3 MiB (64 instances)
L1i cache: 2 MiB (64 instances)
L2 cache: 128 MiB (64 instances)
L3 cache: 120 MiB (2 instances)
NUMA node(s): 2
NUMA node0 CPU(s): 0-31
NUMA node1 CPU(s): 32-63
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	3M	12	Data	1	64	1	64
L1i	32K	2M	8	Instruction	1	64	1	64
L2	2M	128M	16	Unified	2	2048	1	64
L3	60M	120M	15	Unified	3	65536	1	64

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: 257066 MB

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```
node 0 free: 255849 MB
node 1 cpus: 32-63
node 1 size: 258030 MB
node 1 free: 257400 MB
node distances:
node  0  1
  0:  10 21
  1:  21 10
```

9. /proc/meminfo  
MemTotal: 527459200 kB

10. who -r  
run-level 3 Aug 7 05:54

11. Systemd service manager version: systemd 250 (250-6.el9\_0)  
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	ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon atd auditd avahi-daemon bluetooth chronyd crond cups dbus-broker gdm getty@ insights-client-boot irqbalance iscsi iscsi-onboot kdump libstoragemgmt low-memory-monitor lvm2-monitor mcelog mdmonitor microcode multipathd nis-domainname nvme-fc-boot-connections ostree-remount power-profiles-daemon qemu-guest-agent rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark sep5 smartd sshd sssd switcheroo-control sysstat systemd-network-generator udisks2 upower vgauthd vmtoolsd
enabled-runtime	systemd-remount-fs
disabled	arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed dbus-daemon debug-shell dnsmasq firewalld iprdump iprinit iprupdate iscsid iscsiui kpatch kvm_stat ledmon man-db-restart-cache-update nftables nvme-autoconnect podman podman-auto-update podman-restart psacct ras-mc-ctl rasdaemon rdisc rhcd rhsm rhsm-facts rpmdm-rebuild serial-getty@ speech-dispatcherd sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysextr wpa_supplicant
indirect	spice-vdagentd sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

14. Linux kernel boot-time arguments, from /proc/cmdline  
BOOT\_IMAGE=(hd0,gpt3)/boot/vmlinuz-5.14.0-70.13.1.el9\_0.x86\_64  
root=UUID=cc4bab05-907e-44ef-b818-2b2874390234  
ro  
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M  
resume=UUID=5ba347ca-8beb-4f6e-9c11-de63dc4ddf5f  
rhgb  
quiet

15. cpupower frequency-info  
analyzing CPU 0:

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

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. sysctl
kernel.numa_balancing          1
kernel.randomize_va_space     2
vm.compaction_proactiveness   20
vm.dirty_background_bytes     0
vm.dirty_background_ratio     10
vm.dirty_bytes                0
vm.dirty_expire_centisecs    3000
vm.dirty_ratio                20
vm.dirty_writeback_centisecs  500
vm.dirtytime_expire_seconds   43200
vm.extfrag_threshold          500
vm.min_unmapped_ratio         1
vm.nr_hugepages               0
vm.nr_hugepages_mempolicy     0
vm.nr_overcommit_hugepages    0
vm.swappiness                  60
vm.watermark_boost_factor     15000
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_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: /spec2017-icc2023.0
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3        xfs   420G  50G  371G  12% /
-----

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

21. /sys/devices/virtual/dmi/id  
Vendor: XFUSION  
Product: 1288H V7  
Product Family: Eagle Stream  
Serial: serial

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-CQKDG 32 GB 2 rank 4800

23. BIOS  
(This section combines info from /sys/devices and dmidecode.)  
BIOS Vendor: XFUSION  
BIOS Version: 2.00.55  
BIOS Date: 03/07/2023  
BIOS Revision: 0.55

### 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.  
=====





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

## 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
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

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

**Test Date:** Aug-2023  
**Hardware Availability:** Jan-2023  
**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)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 306

FusionServer 1288H V7 (Intel Xeon Gold 6454S)

SPECspeed®2017\_fp\_peak = 306

CPU2017 License: 6488

Test Sponsor: xFusion

Tested by: xFusion

Test Date: Aug-2023

Hardware Availability: Jan-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/xFusion-Platform-Settings-SPR-V1.1-revC.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-SPR-V1.1-revC.xml>

SPEC CPU and SPECspeed are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester. For other inquiries, please contact [info@spec.org](mailto:info@spec.org).

Tested with SPEC CPU®2017 v1.1.9 on 2023-08-07 05:55:44-0400.

Report generated on 2023-08-30 09:37:14 by CPU2017 PDF formatter v6716.

Originally published on 2023-08-29.