



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

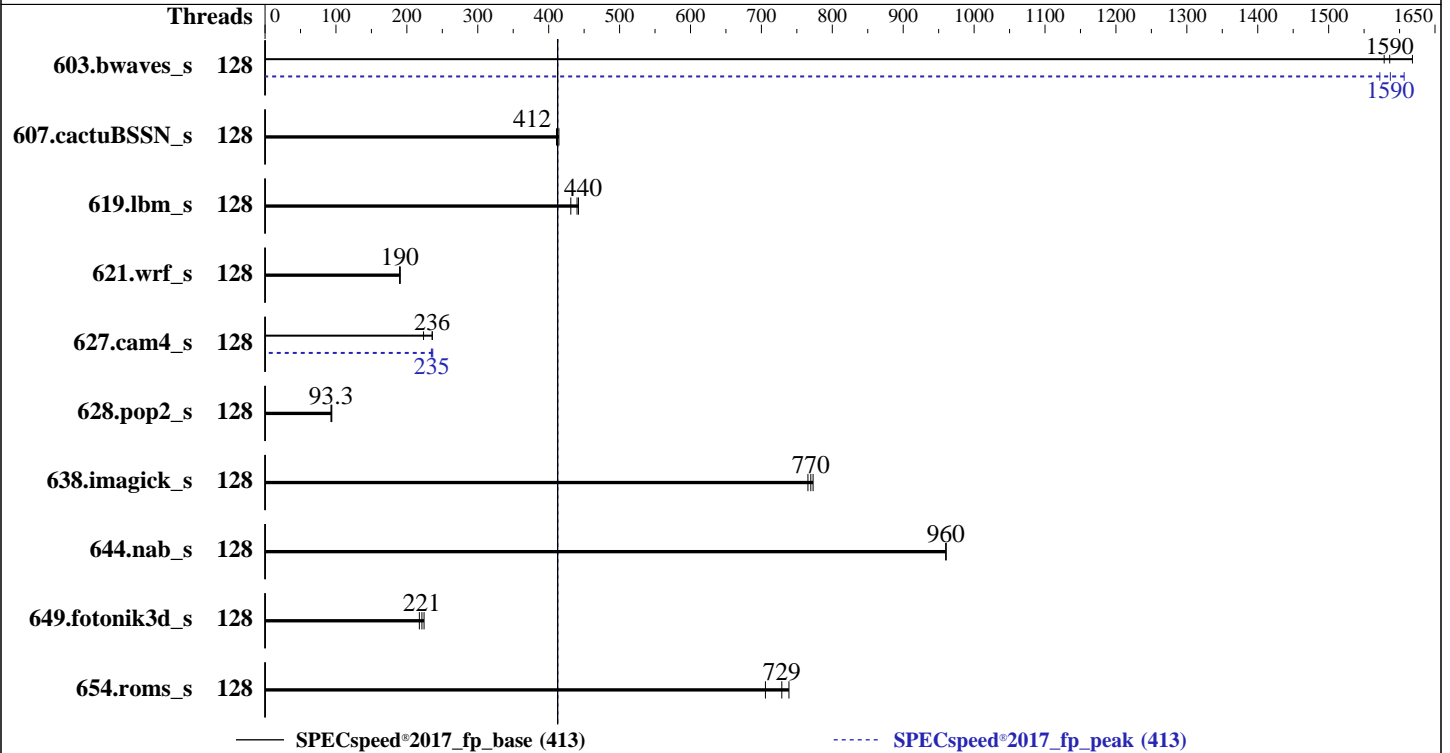
SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

Test Date: Sep-2023  
Hardware Availability: Jul-2023  
Software Availability: Dec-2022



### Hardware

CPU Name: Intel Xeon Gold 6448H  
Max MHz: 4100  
Nominal: 2400  
Enabled: 128 cores, 4 chips  
Orderable: 1,2,4 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: 1 TB (32 x 32 GB 2Rx8 PC5-4800B-R)  
Storage: 1 x 960 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 01.02.00.05 Released Jul-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 and 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 = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECSpeed®2017\_fp\_peak = 413

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

Test Date: Sep-2023  
Hardware Availability: Jul-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	128	36.5	1620	37.4	1580	<u>37.2</u>	<u>1590</u>	128	36.7	1610	37.5	1570	<u>37.2</u>	<u>1590</u>
607.cactuBSSN_s	128	40.6	411	<u>40.4</u>	<u>412</u>	40.2	414	128	40.6	411	<u>40.4</u>	<u>412</u>	40.2	414
619.lbm_s	128	12.1	431	11.8	442	<u>11.9</u>	<u>440</u>	128	12.1	431	11.8	442	<u>11.9</u>	<u>440</u>
621.wrf_s	128	69.4	191	<u>69.6</u>	<u>190</u>	69.7	190	128	69.4	191	<u>69.6</u>	<u>190</u>	69.7	190
627.cam4_s	128	39.7	224	37.6	236	<u>37.6</u>	<u>236</u>	128	<u>37.7</u>	<u>235</u>	37.5	237	37.8	235
628.pop2_s	128	<u>127</u>	<u>93.3</u>	126	94.2	127	93.3	128	<u>127</u>	<u>93.3</u>	126	94.2	127	93.3
638.imagick_s	128	<u>18.7</u>	<u>770</u>	18.7	773	18.8	766	128	<u>18.7</u>	<u>770</u>	18.7	773	18.8	766
644.nab_s	128	18.2	960	18.2	960	<u>18.2</u>	<u>960</u>	128	18.2	960	18.2	960	<u>18.2</u>	<u>960</u>
649.fotonik3d_s	128	41.9	218	<u>41.2</u>	<u>221</u>	40.7	224	128	41.9	218	<u>41.2</u>	<u>221</u>	40.7	224
654.roms_s	128	<u>21.6</u>	<u>729</u>	22.3	706	21.3	739	128	<u>21.6</u>	<u>729</u>	22.3	706	21.3	739

SPECSpeed®2017\_fp\_base = 413

SPECSpeed®2017\_fp\_peak = 413

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact"  
LD\_LIBRARY\_PATH = "/home/Uniautos/cpu2017/lib/intel64:/home/Uniautos/cpu2017/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 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 = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

Sysinfo program /home/Uniautos/cpu2017/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Wed Sep 6 18:02:07 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. 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 5.14.0-70.13.1.e19\_0.x86\_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86\_64  
x86\_64 x86\_64 GNU/Linux  
-----

-----  
2. w  
18:02:07 up 3:10, 0 users, load average: 5.32, 4.50, 2.83  
USER TTY LOGIN@ IDLE JCPU PCPU WHAT  
-----

-----  
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) 4125248  
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 = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECSpeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-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) 4125248
virtual memory             (kbytes, -v) unlimited
file locks                 (-x) unlimited

```

#### 5. sysinfo process ancestry

```

/usr/lib/systemd/systemd --switched-root --system --deserialize 30
/bin/sh ./run_speed.sh
runcpu --define default-platform-flags -c ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=128
--tune base,peak -o all --define drop_caches fpspeed
runcpu --define default-platform-flags --configfile ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define
cores=128 --tune base,peak --output_format all --define drop_caches --nopower --runmode speed --tune
base:peak --size refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.088/templogs/preenv.fpspeed.088.0.log --lognum 088.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/Uniautos/cpu2017

```

#### 6. /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) Gold 6448H
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2b0001b0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores      : 32
siblings       : 32
4 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids 0-31
physical id 1: core ids 0-31
physical id 2: core ids 0-31
physical id 3: 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
physical id 2: apicids
256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300,302,304,306,3
08,310,312,314,316,318
physical id 3: apicids
384,386,388,390,392,394,396,398,400,402,404,406,408,410,412,414,416,418,420,422,424,426,428,430,432,434,4
36,438,440,442,444,446
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

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```

Address sizes:          46 bits physical, 57 bits virtual
Byte Order:            Little Endian
CPU(s):                128
On-line CPU(s) list:   0-127
Vendor ID:             GenuineIntel
BIOS Vendor ID:        Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Gold 6448H
BIOS Model name:       Intel(R) Xeon(R) Gold 6448H
CPU family:            6
Model:                 143
Thread(s) per core:    1
Core(s) per socket:    32
Socket(s):             4
Stepping:              8
Frequency boost:       enabled
CPU max MHz:           2401.0000
CPU min MHz:           800.0000
BogoMIPS:              4800.00
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 rep_good nopl xtopology
                        nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor
                        ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1
                        sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand
                        lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
                        invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced
                        tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bml avx2
                        smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap
                        avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl
                        xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total
                        cqm_mbm_local split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida
                        arat pln pts avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes
                        vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid
                        bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear serialize
                        tsxldtrk pconfig arch_lbr avx512_fp16 amx_tile flush_l1d arch_capabilities
Virtualization:        VT-x
L1d cache:             6 MiB (128 instances)
L1i cache:             4 MiB (128 instances)
L2 cache:              256 MiB (128 instances)
L3 cache:              240 MiB (4 instances)
NUMA node(s):         4
NUMA node0 CPU(s):    0-31
NUMA node1 CPU(s):    32-63
NUMA node2 CPU(s):    64-95
NUMA node3 CPU(s):    96-127
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/swaps 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	6M	12	Data	1	64	1	64
L1i	32K	4M	8	Instruction	1	64	1	64
L2	2M	256M	16	Unified	2	2048	1	64

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

L3 60M 240M 15 Unified 3 65536 1 64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```
available: 4 nodes (0-3)
node 0 cpus: 0-31
node 0 size: 257237 MB
node 0 free: 256334 MB
node 1 cpus: 32-63
node 1 size: 258041 MB
node 1 free: 257620 MB
node 2 cpus: 64-95
node 2 size: 258041 MB
node 2 free: 250188 MB
node 3 cpus: 96-127
node 3 size: 258030 MB
node 3 free: 257629 MB
node distances:
node  0  1  2  3
 0:  10  21  21  21
 1:  21  10  21  21
 2:  21  21  10  21
 3:  21  21  21  10
```

9. /proc/meminfo

MemTotal: 1056101728 kB

10. who -r

run-level 3 Sep 6 14:52

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
* dnf-makecache.service             loaded failed failed dnf makecache
* 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@ irqbalance kdump mdmonitor microcode nis-domainname rhsmcertd
rsyslog selinux-autorelabel-mark sep5 sshd sssd systemd-network-generator tuned udisks2

enabled-runtime systemd-remount-fs
disabled chrony-wait console-getty cpupower debug-shell kvm_stat man-db-restart-cache-update
nftables rdisc rhsm rhsm-facts rpmdm-rebuild 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
```

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

```
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
root=UUID=058bfd1f-c62b-4fad-8d41-5c40aa179007
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=UUID=b47f1685-a5fa-4d39-b2d7-e3f6e95ad499
nohz_full=1-72
```

```
-----
15. cpupower frequency-info
analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 2.40 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
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

```
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)
```

-----  
21. Disk information

SPEC is set to: /home/Uniautos/cpu2017  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda5 xfs 820G 62G 759G 8% /home

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

Vendor: XFUSION  
Product: 2488H V7  
Product Family: EagleStream

-----  
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:  
32x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800

-----  
24. BIOS

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

BIOS Vendor: XFUSION  
BIOS Version: 01.02.00.05  
BIOS Date: 07/13/2023

### 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.

(Continued on next page)





# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

## Compiler Version Notes (Continued)

-----  
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

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

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

## Base Optimization Flags (Continued)

C benchmarks (continued):

```
-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  
-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



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## xFusion

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

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

**Test Date:** Sep-2023  
**Hardware Availability:** Jul-2023  
**Software Availability:** Dec-2022

## 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: -m64 -Wl,-z,muldefs -DSPEC\_OPENMP -xsapphirerapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -gopt-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 -xsapphirerapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -gopt-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

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®2017 Floating Point Speed Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

**xFusion**

SPECspeed®2017\_fp\_base = 413

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECspeed®2017\_fp\_peak = 413

**CPU2017 License:** 6488

**Test Sponsor:** xFusion

**Tested by:** xFusion

**Test Date:** Sep-2023

**Hardware Availability:** Jul-2023

**Software Availability:** Dec-2022

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 2023-09-06 06:02:06-0400.  
Report generated on 2023-09-27 09:36:47 by CPU2017 PDF formatter v6716.  
Originally published on 2023-09-26.