



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

### Copies

503.bwaves\_r

507.cactuBSSN\_r

508.namd\_r

510.parest\_r

511.povray\_r

519.lbm\_r

521.wrf\_r

526.blender\_r

527.cam4\_r

538.imagick\_r

541.mab\_r

549.fotonik3d\_r

554.roms\_r

**Non-Compliant**

### Hardware

CPU Name: Intel Xeon Platinum 8490H  
Max MHz: 3500  
Nominal: 1900  
Enabled: 60 cores, 1 chip  
Orderable: 1 chip  
Cache L1: 32 KB I + 48 KB D on chip per core  
L2: 2 MB I+D on chip per core  
L3: 112.5 MB I+D on chip per chip  
Other: None

(Continued on next page)

### Software

OS: SUSE Linux Enterprise Server 15 SP4  
Kernel 5.14.21-150400.22-default  
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: No  
Firmware: Version 1.0a released Nov-2022  
File System: xfs

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

### Hardware (Continued)

Memory: 256 GB (8 x 32 GB 2Rx8 PC5-4800B-R)  
Storage: 1 x 240 GB SATA III SSD  
Other: None

### Software (Continued)

System State: System level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other: jemalloc memory allocator V5.0.1  
Power Management: BIOS set to prefer performance at the cost of additional power usage.

## Result Table

Benchmark	Base						Peak								
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	
503.bwaves_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
507.cactuBSSN_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
508.namd_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
510.parest_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
511.povray_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
519.lbm_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
521.wrf_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
526.blender_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
527.cam4_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
538.imagick_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
544.nab	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
549.fotom_3d_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
554.roms_r	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

SPECrate®2017\_fp\_base =

SPECrate 2017\_fp\_peak =

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

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



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/home/cpu2017/lib/intel64:/home/cpu2017/jemalloc-0.1-64"  
MALLOC\_CONF = "retain:true"

## General Notes

Binaries compiled on a system with an 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  
runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <e

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 Settings:  
Power Technology = Custom  
Energy Tuning = BIOS Controls EPB  
ENERGY\_PERF\_BIAS\_CFG mode = Performance  
DCU Streamer Prefetcher = Disable  
SNC = Enable SNC4 (4-clusters)  
LLC Dead Line Alloc = Disable  
KTI Prefetch = Enable  
Stale Aton = Disable  
Patrol Scrub = Disable  
Hyper-Threading [ALL] = Disable

Sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r6622 of 2021-04-07 982a61ec0915b55891ef0e16acafc64d  
running on 135-173-251.engtw Fri Dec 2 11:44:09 2022

SUT (System Under Test) info as seen by some common utilities.  
For more information on this section, see  
<https://www.spec.org/cpu2017/Docs/config.html#sysinfo>

(Continued on next page)



# SPEC CPU® 2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate® 2017\_fp\_base =

SPECrate® 2017\_fp\_peak =

CPU2017 License: 001176  
Test Sponsor: Supermicro  
Tested by: Supermicro

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

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

### Platform Notes (Continued)

```

From /proc/cpuinfo
model name : Intel(R) Xeon(R) Platinum 8490H
 1 "physical id"s (chips)
 60 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following
excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
cpu cores : 60
siblings : 60
physical 0: cores 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52
53 54 55 56 57 58 59

```

```

From lscpu from util-linux 2.37.2:
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Address sizes:          46 bit physical, 57 bits virtual
Byte Order:             Little Endian
CPU(s):                 60
On-line CPU(s) list:   0-59
Vendor ID:              GenuineIntel
Model name:             Intel(R) Xeon(R) Platinum 8490H
CPU family:             6
Model:                 143
Thread(s) per core:    1
Core(s) per socket:    60
Socket(s):              1
Stepping:               6
Frequency boost:        enabled
CPU max MHz:            1901.0000
CPU min MHz:            800.0000
BogoMIPS:               3800.00
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
                        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 ept_v1 pvtl tlb_l1d_0 tlb_l1d_1 tlb_l1d_2 tlb_l1d_3 cat_l2 cdp_l3 invpcid_single cdp_l2 ssbd mba ibrs ibpb stibp
                        ibr_enhanced_tpr_shadow vmmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1
                        hle avx2 smep bmi2 erms invpcid rtm cqm rdt_a avx512f avx512dq rdseed adx smap
                        avx512ifma cflushopt 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:              2.8 MiB (60 instances)
L1i cache:              1.9 MiB (60 instances)
L2 cache:               120 MiB (60 instances)

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

### Platform Notes (Continued)

```

L3 cache: 112.5 MiB (1 instance)
NUMA node(s): 4
NUMA node0 CPU(s): 0-14
NUMA node1 CPU(s): 15-29
NUMA node2 CPU(s): 30-44
NUMA node3 CPU(s): 45-59
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 and seccomp
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-SIZES	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	2.8M	12	Data	1	64	1	64
L1i	32K	1.9M	12	Instruction	1	64	1	64
L2	2M	20M	1	Unified	2	2048	1	64
L3	112.5M	112.5M	15	Unified	3	122880	1	64

/proc/cpuinfo cache size: 115200 MB

From numactl --hardware

WARNING: 'numactl --hardware' might or might not correspond to a physical chip.

```

available 4 nodes (0-3)
node 0 cpus: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
node 0 size: 64144 MB
node 0 free: 63305 MB
node 1 cpus: 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
node 1 size: 64508 MB
node 1 free: 64227 MB
node 2 cpus: 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44
node 2 size: 64473 MB
node 2 free: 64107 MB
node 3 cpus: 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59
node 3 size: 64479 MB
node 3 free: 64172 MB
node distances:
node 0 1 2 3
0: 10 12 12 12
1: 12 10 12 12
2: 12 12 10 12
3: 12 12 12 10

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

### Platform Notes (Continued)

From /proc/meminfo

MemTotal: 263787908 kB  
HugePages\_Total: 0  
Hugepagesize: 2048 kB

/sys/devices/system/cpu/cpu\*/cpufreq/scaling\_governor has  
ondemand

From /etc/\*release\* /etc/\*version\*

os-release:  
NAME="SLES"  
VERSION="15-SP4"  
VERSION\_ID="15.4"  
PRETTY\_NAME="SUSE Linux Enterprise Server 15 SP4"  
ID="sles"  
ID\_LIKE="suse"  
ANSI\_COLOR="0;32"  
CPE\_NAME="cpe:/o:suse:sles:15:sp4"

uname -a:

Linux 135-173-251.erp 5.14.21-150400.22-default #1 SMP PREEMPT\_DYNAMIC Wed May 11  
06:57:18 UTC 2022 (9db2) x86\_64 x86\_64 x86\_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2018-12207 (CPU Multiplier): Not affected  
CVE-2018-3620 (L1 Terminal Fault): Not affected  
Microarchitectural Data Sampling: Not affected  
CVE-2017-5754 (Meltdown): Not affected  
CVE-2018-3639 (Speculative Store Bypass): Mitigation: Speculative Store  
Bypass disabled via prctl and  
seccomp  
CVE-2017-5753 (Spectre variant 1): Mitigation: usercopy/swapgs  
barriers and \_\_user pointer  
sanitization  
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB:  
conditional, RSB filling  
CVE-2020-0543 (Special Register Buffer Data Sampling): Not affected  
CVE-2019-11135 (TSX Asynchronous Abort): Not affected

run-level 3 Dec 2 11:35

SPEC is set to: /home/cpu2017

Filesystem Type Size Used Avail Use% Mounted on  
/dev/sda2 xfs 221G 8.0G 213G 4% /

From /sys/devices/virtual/dmi/id

Vendor: Supermicro  
Product: Super Server  
Product Family: Family  
Serial: 0123456789

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176  
Test Sponsor: Supermicro  
Tested by: Supermicro

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

**SPEC has determined that this result does not comply with the SPEC CPU 2017 rules and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

## Platform Notes (Continued)

Additional information from dmidecode 3.2 follows. **WARNING:** Use caution when you interpret this section. The 'dmidecode' program reads system information which is "intended to allow hardware to be accurately determined", but the content may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMI BIOS" standard.

Memory:

8x Samsung M321R4GA3BB6-CQKEG 32 GB 2 rank 4800

BIOS:

BIOS Vendor: American Megatrends International, LLC.  
BIOS Version: 1.0a  
BIOS Date: 11/29/2022  
BIOS Revision: 5.29

(End of data from sysinfo program)

## Compiler Version Notes

=====  
C | 519.llnvd\_r(base, peak) 538.imagick\_r(base, peak) 544.nab\_r(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.

=====  
C++ | 508.ned\_r(base, peak) 510.parest\_r(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.

=====  
C++ C | 511.povray\_r(base, peak) 526.blender\_r(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.

=====  
C++, C, Fortran | 507.cactuBSSN\_r(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.

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176  
Test Sponsor: Supermicro  
Tested by: Supermicro

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

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

## Compiler Version Notes (Continued)

```

=====
Fortran          | 503.bwaves_r(base, peak) 549.fotonik_r(base, peak) 554.roms_r(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       | 521.wrf_r(base, peak) 527.cam4_r(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

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Benchmarks using both Fortran and C:
ifx icx

Benchmarks using both C and C++:
icpx icx

Benchmarks using Fortran, C, and C++:
icpx icx ifx

```





# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

## Base Portability Flags

```

503.bwaves_r: -DSPEC_LP64
507.cactuBSSN_r: -DSPEC_LP64
508.namd_r: -DSPEC_LP64
510.parest_r: -DSPEC_LP64
511.povray_r: -DSPEC_LP64
519.lbm_r: -DSPEC_LP64
521.wrf_r: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
526.blender_r: -DSPEC_LP64 -DSPEC_LINUX -fused-char
527.cam4_r: -DSPEC_LP64 -DSPEC_CASE_FLAG
538.imagick_r: -DSPEC_LP64
544.nab_r: -DSPEC_LP64
549.fotonik3d_r: -DSPEC_LP64
554.roms_r: -DSPEC_LP64

```

## Base Optimization Flags

### C benchmarks:

```

-w -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

```

### C++ benchmarks:

```

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math -flto
-funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

```

### Fortran benchmarks:

```

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

```

### Benchmarks using both Fortran and C:

```

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

```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 rules and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

## Base Optimization Flags (Continued)

Benchmarks using both C and C++:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX512 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array3byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF , Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =

SPECrate®2017\_fp\_peak =

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2022

Hardware Availability: Jan-2023

Software Availability: Jun-2022

**SPEC has determined that this result does not comply with the SPEC CPU 2017 run and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

519.lbm\_r: basepeak = yes

538.imagick\_r: basepeak = yes

544.nab\_r: -w -std=c11 -m64 -Wl,-z,defs -xCORE-AVX512 -Ofast -ffast-math -flto -mfpmath=se -funroll-loops -gopt-mem-layout-trans=4 -gopt-zmm-usage=high -ljemalloc -L/usr/local/jemalloc-5.0.1/lib

C++ benchmarks:

508.namd\_r: basepeak = yes

510.prest\_r: basepeak = yes

Fortran benchmarks:

549.tonik3d\_r: basepeak = yes

549.tonik3d\_r: basepeak = yes

554.roms\_r: basepeak = yes

Benchmarks using both Fortran and C:

521.wrf\_r: basepeak = yes

527.cam4\_r: basepeak = yes

Benchmarks using both C and C++:

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-521E-WR  
(X13SEW-TF, Intel Xeon Platinum 8490H)

SPECrate®2017\_fp\_base =  
SPECrate®2017\_fp\_peak =

CPU2017 License: 001176  
Test Sponsor: Supermicro  
Tested by: Supermicro

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

**SPEC has determined that this result does not comply with the SPEC CPU 2017 rules and reporting rules. Specifically, the test sponsor notified SPEC that the results were measured on an unsupported configuration.**

## Peak Optimization Flags (Continued)

```
511.povray_r: -w -m64 -std=c11 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX512
-Ofast -ffast-math -flto -mfpmath=sse -mllvm -mllvm-opts
-qopt-mem-layout-trans=4 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

526.blender\_r: basepeak = yes

Benchmarks using Fortran, C, and C++

507.cactuBSSN\_r: 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/Supermicro-Platform-Settings-V1.2-SPR-revC.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/Supermicro-Platform-Settings-V1.2-SPR-revC.xml>

SPEC CPU and SPECrate 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 v1.1.8 on 2022-12-01 22:44:09-0500.  
Report generated on 2023-09-14 16:40:05 by CPU2017 PDF formatter v6716.  
Originally published on 2023-01-10.