



SPEC CPU®2017 Floating Point Rate Result

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xFusion

SPECrate®2017_fp_base = 1510

FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 6488

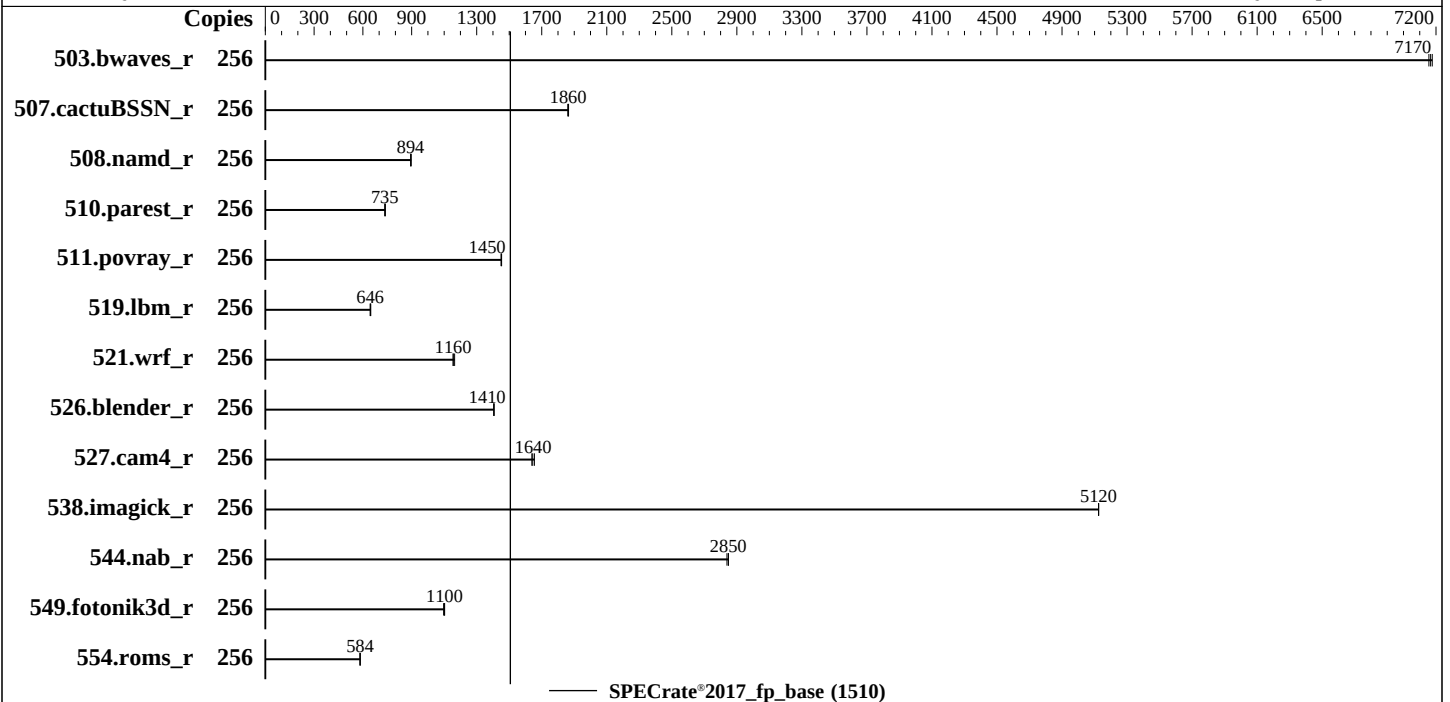
Test Sponsor: xFusion

Tested by: xFusion

Test Date: Oct-2025

Hardware Availability: Jul-2023

Software Availability: Apr-2024



Hardware

CPU Name: Intel Xeon Gold 6448H
Max MHz: 4100
Nominal: 2400
Enabled: 128 cores, 4 chips, 2 threads/core
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: 2 TB (32 x 64 GB 2Rx4 PC5-5600B-R, running at 4800)
Storage: 1 x 480 GB SATA SSD
Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 9.4 (Plow)
5.14.0-427.13.1.el9_4.x86_64
Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2024.1 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 01.02.08.05 Released Jul-2025
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: Not Applicable
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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	256	<u>358</u>	<u>7170</u>	358	7180	359	7160							
507.cactuBSSN_r	256	174	1860	174	1860	<u>174</u>	<u>1860</u>							
508.namd_r	256	271	897	<u>272</u>	<u>894</u>	272	894							
510.parest_r	256	907	738	<u>911</u>	<u>735</u>	911	735							
511.povray_r	256	<u>412</u>	<u>1450</u>	412	1450	411	1450							
519.lbm_r	256	<u>418</u>	<u>646</u>	416	649	418	645							
521.wrf_r	256	<u>496</u>	<u>1160</u>	493	1160	497	1150							
526.blender_r	256	277	1410	277	1410	<u>277</u>	<u>1410</u>							
527.cam4_r	256	<u>272</u>	<u>1640</u>	273	1640	271	1650							
538.imagick_r	256	124	5120	<u>124</u>	<u>5120</u>	124	5120							
544.nab_r	256	151	2850	152	2840	<u>151</u>	<u>2850</u>							
549.fotonik3d_r	256	910	1100	<u>905</u>	<u>1100</u>	905	1100							
554.roms_r	256	699	582	697	584	<u>697</u>	<u>584</u>							

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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"

Environment Variables Notes

Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/cpu2017-ic2024.1/lib/intel64:/cpu2017-ic2024.1/je5.0.1-64"
MALLOC_CONF = "retain:true"

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
runcpu command invoked through numactl i.e.:
numactl --interleave=all runcpu <etc>
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)
is mitigated in the system as tested and documented.

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General Notes (Continued)

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 Performance

SNC Set to Enable SNC2 (2-clusters)

Sysinfo program /cpu2017-ic2024.1/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on localhost.localdomain Wed Oct 22 00:22:02 2025

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

Table of contents

1. uname -a
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11. Systemd service manager version: systemd 252 (252-32.el9_4)
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14. cpupower frequency-info
15. tuned-adm active
16. sysctl
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18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
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21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

```
1. uname -a
Linux localhost.localdomain 5.14.0-427.13.1.el9_4.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 10 10:29:16 EDT
2024 x86_64 x86_64 x86_64 GNU/Linux
```

```
2. w
00:22:02 up 2:55, 1 user, load average: 70.19, 196.02, 231.65
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
root      tty1     21:28   2:39m  0.04s  0.04s -bash
```

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Platform Notes (Continued)

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) 8253798
max locked memory           (kbytes, -l) 8192
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) 8253798
virtual memory              (kbytes, -v) unlimited
file locks                  (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize 31
/bin/sh ./test-rate.sh
runcpu --define default-platform-flags --copies 256 -c ic2024.1-lin-sapphirerapids-rate-20240308.cfg
--define smt-on --define cores=128 --define physicalfirst --define invoke_with_interleave --define
drop_caches --tune base -o all fprate
runcpu --define default-platform-flags --copies 256 --configfile
ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=128 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base --output_format all --nopower --runmode
rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.006/templogs/preenv.fprate.006.0.log --lognum 006.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /cpu2017-ic2024.1
```

6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) Gold 6448H
vendor_id       : GenuineIntel
cpu family      : 6
model           : 143
stepping        : 8
microcode       : 0x2b000639
bugs             : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb
cpu cores       : 32
siblings        : 64
4 physical ids (chips)
256 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 0-63
physical id 1:  apicids 128-191
physical id 2:  apicids 256-319
physical id 3:  apicids 384-447
```

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Platform Notes (Continued)

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):                 256
On-line CPU(s) list:   0-255
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:    2
Core(s) per socket:    32
Socket(s):              4
Stepping:               8
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 bts rep_good nopl
                        xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq
                        dtes64 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
                        intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow
                        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
                        split_lock_detect avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts
                        hfi vnmi 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_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):          8
NUMA node0 CPU(s):     0-15,128-143
NUMA node1 CPU(s):     16-31,144-159
NUMA node2 CPU(s):     32-47,160-175
NUMA node3 CPU(s):     48-63,176-191
NUMA node4 CPU(s):     64-79,192-207
NUMA node5 CPU(s):     80-95,208-223
NUMA node6 CPU(s):     96-111,224-239
NUMA node7 CPU(s):     112-127,240-255
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:       Not affected
Vulnerability L1tf:                Not affected
Vulnerability Mds:                 Not affected
```

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Platform Notes (Continued)

Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec rstack overflow: 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 / Automatic IBRS, IBPB conditional, RSB filling, PBR SB-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	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
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: 8 nodes (0-7)
node 0 cpus: 0-15,128-143
node 0 size: 257272 MB
node 0 free: 248266 MB
node 1 cpus: 16-31,144-159
node 1 size: 258039 MB
node 1 free: 250873 MB
node 2 cpus: 32-47,160-175
node 2 size: 258039 MB
node 2 free: 250832 MB
node 3 cpus: 48-63,176-191
node 3 size: 258039 MB
node 3 free: 250864 MB
node 4 cpus: 64-79,192-207
node 4 size: 258039 MB
node 4 free: 250708 MB
node 5 cpus: 80-95,208-223
node 5 size: 258039 MB
node 5 free: 250781 MB
node 6 cpus: 96-111,224-239
node 6 size: 257998 MB
node 6 free: 250667 MB
node 7 cpus: 112-127,240-255
node 7 size: 258024 MB
node 7 free: 250851 MB
node distances:
node 0 1 2 3 4 5 6 7
0: 10 12 21 21 21 21 21 21
1: 12 10 21 21 21 21 21 21
2: 21 21 10 12 21 21 21 21
3: 21 21 12 10 21 21 21 21
4: 21 21 21 21 10 12 21 21
5: 21 21 21 21 12 10 21 21
6: 21 21 21 21 21 21 10 12
7: 21 21 21 21 21 21 12 10

9. /proc/meminfo

MemTotal: 2113017000 kB

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Platform Notes (Continued)

10. who -r
run-level 3 Oct 21 21:26

11. Systemd service manager version: systemd 252 (252-32.el9_4)
Default Target Status
multi-user running

12. Services, from systemctl list-unit-files
STATE UNIT FILES
enabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd crond
dbus-broker firewalld getty@ insights-client-boot irqbalance kdump low-memory-monitor
lvm2-monitor mdmonitor microcode nis-domainname rhsmcertd rsyslog rtkit-daemon
selinux-autorelabel-mark sshd sssd systemd-boot-update systemd-network-generator tuned
udisks2 upower
enabled-runtime systemd-remount-fs
disabled blk-availability canberra-system-bootup canberra-system-shutdown
canberra-system-shutdown-reboot chrony-wait chronyd chronyd-restricted console-getty
cpupower debug-shell dnf-system-upgrade ipsec kvm_stat man-db-restart-cache-update
nftables pesign rdisc rhcd rhsm rhsm-facts rpmbd-rebuild selinux-check-proper-disable
serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysex
indirect sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo systemd-sysupdate
systemd-sysupdate-reboot

13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-427.13.1.el9_4.x86_64
root=/dev/mapper/rhel-root
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap

14. cpupower frequency-info
analyzing CPU 177:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes

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

16. sysctl
kernel.numa_balancing 1
kernel.randomize_va_space 2
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

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Platform Notes (Continued)

```
vm.dirtytime_expire_seconds 43200
vm.extfrag_threshold        500
vm.min_unmapped_ratio       1
vm.nr_hugepages              0
vm.nr_hugepages_mempolicy    0
vm.nr_overcommit_hugepages   0
vm.swappiness                 10
vm.watermark_boost_factor    15000
vm.watermark_scale_factor    10
vm.zone_reclaim_mode         0
```

```
-----
17. /sys/kernel/mm/transparent_hugepage
defrag          always defer+madvise [madvise] never
enabled         [always] madvise 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 9.4 (Plow)
redhat-release  Red Hat Enterprise Linux release 9.4 (Plow)
system-release  Red Hat Enterprise Linux release 9.4 (Plow)
-----
```

```
-----
20. Disk information
SPEC is set to: /cpu2017-ic2024.1
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/mapper/rhel-root xfs   140G  62G   79G  44% /
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor:      XFUSION
Product:     2488H V7
Product Family: EagleStream
Serial:      202412131126
-----
```

```
-----
22. dmidecode
Additional information from dmidecode 3.5 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 Micron MTC40F2046S1RC56BD1 64 GB 2 rank 5600, configured at 4800
 13x Samsung M321R8GA0PB0-CWMKH 64 GB 2 rank 5600, configured at 4800
  3x Samsung M321R8GA0PB0-CWMXH 64 GB 2 rank 5600, configured at 4800
-----
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Platform Notes (Continued)

23. BIOS

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

BIOS Vendor: XFUSION
BIOS Version: 01.02.08.05
BIOS Date: 07/21/2025

Compiler Version Notes

C | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

C++ | 508.namd_r(base) 510.parest_r(base)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

C++, C | 511.povray_r(base) 526.blender_r(base)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

C++, C, Fortran | 507.cactuBSSN_r(base)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

Fortran | 503.bwaves_r(base) 549.fotonik3d_r(base) 554.roms_r(base)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

Fortran, C | 521.wrf_r(base) 527.cam4_r(base)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308
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xFusion

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FusionServer 2488H V7 (Intel Xeon Gold 6448H)

SPECrate®2017_fp_peak = Not Run

CPU2017 License: 6488

Test Sponsor: xFusion

Tested by: xFusion

Test Date: Oct-2025

Hardware Availability: Jul-2023

Software Availability: Apr-2024

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

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 -funsigned-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 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast -ffast-math

-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc

-L/usr/local/jemalloc64-5.0.1/lib

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SPEC CPU®2017 Floating Point Rate Result

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Base Optimization Flags (Continued)

C++ benchmarks:

```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xsapphirerapids -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 -xsapphirerapids -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs  
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using both 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 -Wno-implicit-int -mprefer-vector-width=512  
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsapphirerapids -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512  
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib
```

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-V1.1.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-V1.1.xml>

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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