



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

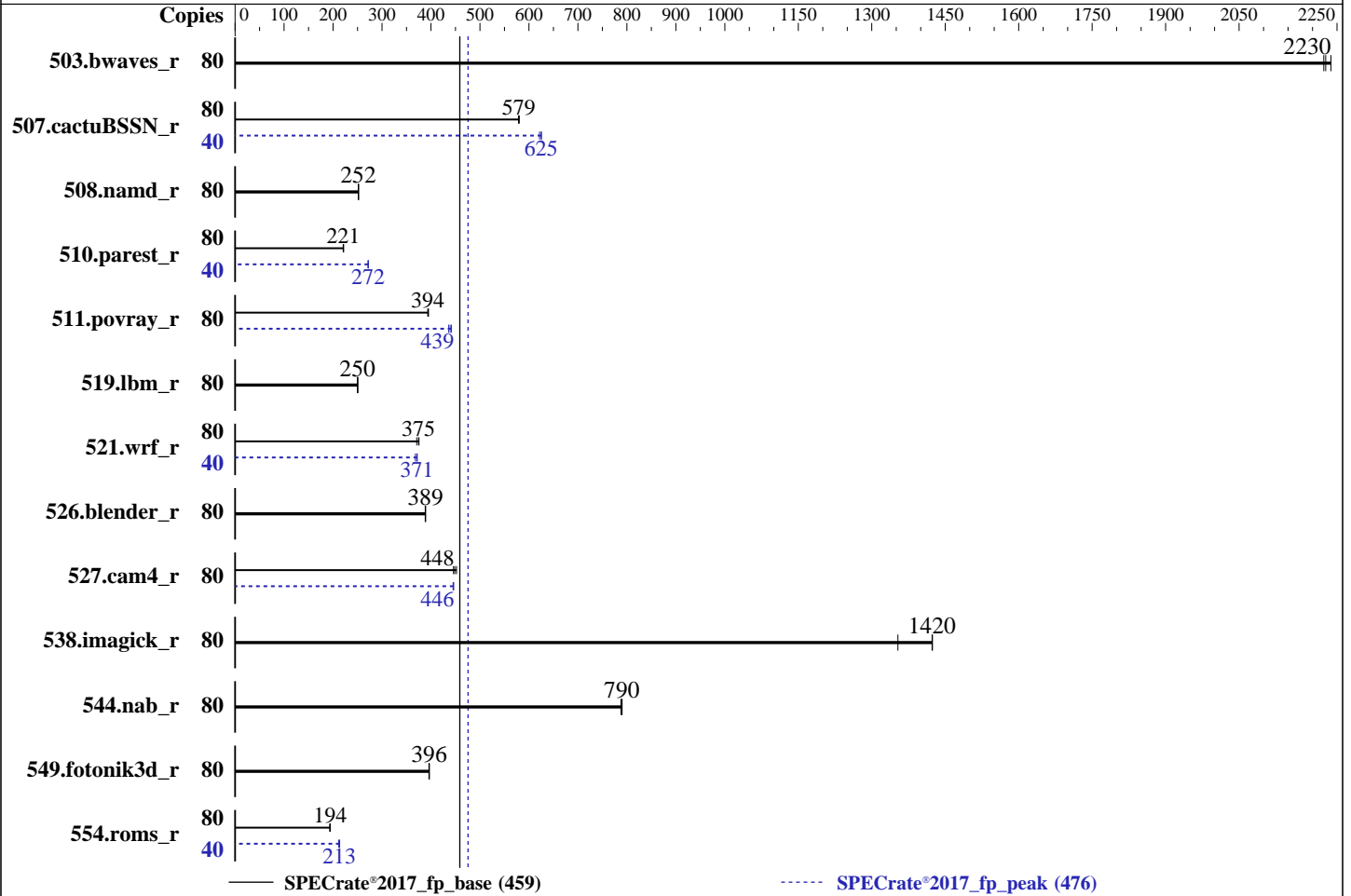
Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026



Hardware

CPU Name: Intel Xeon Silver 4416+
 Max MHz: 3900
 Nominal: 2000
 Enabled: 40 cores, 2 chips, 2 threads/core
 Orderable: 1,2 chip(s)
 Cache L1: 32 KB I + 48 KB D on chip per core
 L2: 2 MB I+D on chip per core
 L3: 37.5 MB I+D on chip per chip
 Other: None
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R, running at 4000)
 Storage: 1 x 1.92 TB SATA III SSD
 Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 16.0
 Kernel 6.12.0-160000.9-default x86_64
 Compiler: C/C++: Version 2025.2 of Intel oneAPI DPC++/C++ Compiler for Linux;
 Fortran: Version 2025.2 of Intel Fortran Compiler for Linux;
 Parallel: No
 Firmware: BIOS Version 06.09.01 released Aug-2025
 File System: ext4
 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 Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Date: Mar-2026

Test Sponsor: Epsilon IT Sp. z o.o.

Hardware Availability: Dec-2023

Tested by: Epsilon IT Sp. z o.o.

Software Availability: Jan-2026

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	80	359	2240	361	2220	360	2230	80	359	2240	361	2220	360	2230
507.cactuBSSN_r	80	175	579	175	580	175	579	40	81.0	625	81.0	625	81.5	622
508.namd_r	80	302	252	301	252	302	252	80	302	252	301	252	302	252
510.parest_r	80	944	222	946	221	948	221	40	385	272	385	272	385	272
511.povray_r	80	473	395	475	394	474	394	80	423	442	428	436	425	439
519.lbm_r	80	337	250	337	250	337	250	80	337	250	337	250	337	250
521.wrf_r	80	483	371	477	375	478	375	40	241	371	241	372	243	368
526.blender_r	80	313	389	313	389	314	388	80	313	389	313	389	314	388
527.cam4_r	80	309	452	312	448	314	446	80	314	445	314	446	314	446
538.imagick_r	80	140	1420	140	1420	147	1350	80	140	1420	140	1420	147	1350
544.nab_r	80	171	788	170	790	170	790	80	171	788	170	790	170	790
549.fotonik3d_r	80	786	397	788	396	787	396	80	786	397	788	396	787	396
554.roms_r	80	655	194	658	193	654	194	40	299	213	298	214	301	211

SPECrate®2017_fp_base = 459

SPECrate®2017_fp_peak = 476

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 = "/cpu2017-1.1.9/lib/intel64:/cpu2017-1.1.9/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

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.

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026

General Notes (Continued)

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:
ENERGY_PERF_BIAS_CFG mode = Performance
Patrol Scrub = Disabled
SNC = Enable SNC2 (2-Clusters)
Enable LP [Global] = ALL LPs

BMC Configuration:
Fan mode = Generic mode

Sysinfo program /cpu2017-1.1.9/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on SUT Fri Mar 27 22:02:56 2026

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. Systemd service manager version: systemd 257 (257.10+suse.31.gfb9d92682b)
11. Services, from systemctl list-unit-files
12. Linux kernel boot-time arguments, from /proc/cmdline
13. cpupower frequency-info
14. tuned-adm active
15. sysctl
16. /sys/kernel/mm/transparent_hugepage
17. /sys/kernel/mm/transparent_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

1. uname -a
Linux SUT 6.12.0-160000.9-default #1 SMP PREEMPT_DYNAMIC Fri Jan 16 09:29:05 UTC 2026 (9badd3c) x86_64
x86_64 x86_64 GNU/Linux

2. w
22:02:56 up 6:27, 2 users, load average: 45.41, 70.95, 75.96
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026

Platform Notes (Continued)

```

root      tty1      -                16:36    6:25m  1.30s  0.02s  -bash
root      tty2      -                16:36    6:25m  0.02s  0.02s  -bash

```

3. Username

From environment variable \$USER: root

4. ulimit -a

```

real-time non-blocking time (microseconds, -R) unlimited
core file size              (blocks, -c) unlimited
data seg size                (kbytes, -d) unlimited
scheduling priority         (-e) 0
file size                    (blocks, -f) unlimited
pending signals              (-i) unlimited
max locked memory            (kbytes, -l) unlimited
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) unlimited
virtual memory                (kbytes, -v) unlimited
file locks                   (-x) unlimited

```

5. sysinfo process ancestry

```

/usr/lib/systemd/systemd --switched-root --system --deserialize=47
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=80 -c
  ic2025.2-linux64-sapphirerapids-rate-20250605.cfg --define smt-on --define cores=40 --define physicalfirst
  --define invoke_with_interleave --define drop_caches --tune base,peak --o pdf fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=80 --configfile
  ic2025.2-linux64-sapphirerapids-rate-20250605.cfg --define smt-on --define cores=40 --define physicalfirst
  --define invoke_with_interleave --define drop_caches --tune base,peak --output_format pdf --nopower
  --runmode rate --tune base:peak --size refrate fprate --nopreenv --note-preenv --logfile
  $SPEC/tmp/CPU2017.002/templogs/preenv.fprate.002.0.log --lognum 002.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /cpu2017-1.1.9

```

6. /proc/cpuinfo

```

model name      : Intel(R) Xeon(R) Silver 4416+
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping       : 8
microcode      : 0x2b000643
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi spectre_v2_user vmscape
cpu cores      : 20
siblings       : 40
2 physical ids (chips)
80 processors (hardware threads)
physical id 0: core ids 0-19
physical id 1: core ids 0-19
physical id 0: apicids 0-39

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026

Platform Notes (Continued)

physical id 1: apicids 128-167

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 2.41.1:

```

Architecture:                x86_64
CPU op-mode(s):              32-bit, 64-bit
Address sizes:                52 bits physical, 57 bits virtual
Byte Order:                  Little Endian
CPU(s):                       80
On-line CPU(s) list:         0-79
Vendor ID:                   GenuineIntel
Model name:                   Intel(R) Xeon(R) Silver 4416+
CPU family:                   6
Model:                        143
Thread(s) per core:          2
Core(s) per socket:          20
Socket(s):                    2
Stepping:                     8
CPU(s) scaling MHz:          21%
CPU max MHz:                  3900.0000
CPU min MHz:                  800.0000
BogoMIPS:                     4000.00
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 aperfperf tsc_known_freq pni
                             pclmulqdq dtes64 monitor ds_cpl 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 ept cat_l3 cat_l2 cdp_l3 intel_ppin
                             cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced fsgsbase tsc_adjust
                             bmil 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
                             user_shstk avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts
                             avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes
                             vpclmulqdq avx512_vnni avx512_bitalg 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_lld arch_capabilities
L1d cache:                    1.9 MiB (40 instances)
L1i cache:                    1.3 MiB (40 instances)
L2 cache:                     80 MiB (40 instances)
L3 cache:                     75 MiB (2 instances)
NUMA node(s):                 4
NUMA node0 CPU(s):            0-9,40-49
NUMA node1 CPU(s):            10-19,50-59
NUMA node2 CPU(s):            20-29,60-69
NUMA node3 CPU(s):            30-39,70-79
Vulnerability Gather data sampling: Not affected
Vulnerability Indirect target selection: Not affected
Vulnerability Itlb multihit:  Not affected
Vulnerability L1tf:           Not affected
Vulnerability Mds:            Not affected
Vulnerability Meltdown:       Not affected

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Date: Mar-2026

Test Sponsor: Epsilon IT Sp. z o.o.

Hardware Availability: Dec-2023

Tested by: Epsilon IT Sp. z o.o.

Software Availability: Jan-2026

Platform Notes (Continued)

Vulnerability Mmio stale data:	Not affected
Vulnerability Reg file data sampling:	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; PBRSE-eIBRS SW sequence; BHI BHI_DIS_S
Vulnerability Srbds:	Not affected
Vulnerability Tsa:	Not affected
Vulnerability Tsx async abort:	Not affected
Vulnerability Vmscape:	Mitigation; IBPB before exit to userspace

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	1.9M	12	Data	1	64	1	64
L1i	32K	1.3M	8	Instruction	1	64	1	64
L2	2M	80M	16	Unified	2	2048	1	64
L3	37.5M	75M	15	Unified	3	40960	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: 0-9,40-49
node 0 size: 257614 MB
node 0 free: 243765 MB
node 1 cpus: 10-19,50-59
node 1 size: 258040 MB
node 1 free: 248483 MB
node 2 cpus: 20-29,60-69
node 2 size: 258040 MB
node 2 free: 248727 MB
node 3 cpus: 30-39,70-79
node 3 size: 257977 MB
node 3 free: 248869 MB
node distances:
node    0    1    2    3
0:    10   12   21   21
1:    12   10   21   21
2:    21   21   10   12
3:    21   21   12   10

```

9. /proc/meminfo

MemTotal: 1056432976 kB

'who -r' did not return a run level

10. Systemd service manager version: systemd 257 (257.10+suse.31.gfb9d92682b)

```

Default Target Status
multi-user      running

```

11. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	NetworkManager NetworkManager-dispatcher NetworkManager-wait-online appstream-sync-cache audit-rules auditd chronyd dbus-broker firewalld getty@ irqbalance issue-generator

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026

Platform Notes (Continued)

```

kbdsettings klog lvm2-monitor rollback rsyslog smartd soft-reboot-cleanup sshd
systemd-pstore wpa_supplicant wtmpdb-update-boot
enabled-runtime  systemd-fsck-root systemd-remount-fs
disabled         blk-availability boot-sysctl ca-certificates ca-certificates-setup chrony-wait
                 console-getty containerd debug-shell dnsmasq docker exchange-bmc-os-info gpm grub2-once
                 hwloc-dump-hwdata ipmievd issue-add-ssh-keys jeos-firstboot jeos-firstboot-snapshot
                 kernel-sysctl kexec-load langset lastlog2-import lunmask lvm-devices-import man-db-create
                 multipathd nftables nis-domainname rpmconfigcheck rsyncd serial-getty@
                 setup-systemd-proxy-env smartd_generate_opts snmpd snmptrapd
                 systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysex
                 systemd-time-wait-sync systemd-timesyncd systemd-udev-load-credentials tuned udisks2
                 wpa_supplicant@
indirect        systemd-userdbd

```

```

-----
12. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=/boot/vmlinuz-6.12.0-160000.9-default
root=UUID=59f9f04f-e759-4ecc-8e22-28acb39f7f76
mitigations=auto
quiet
security=

```

```

-----
13. cpupower frequency-info
analyzing CPU 10:
  current policy: frequency should be within 800 MHz and 3.90 GHz.
                  The governor "performance" may decide which speed to use
                  within this range.
  boost state support:
    Supported: yes
    Active: yes

```

```

-----
14. tuned-adm active
  It seems that tuned daemon is not running, preset profile is not activated.
  Preset profile: throughput-performance

```

```

-----
15. 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

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026

Platform Notes (Continued)

```

16. /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

```

```

-----
17. /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

```

```

-----
18. OS release
   From /etc/*-release /etc/*-version
   os-release SUSE Linux Enterprise Server 16.0

```

```

-----
19. Disk information
SPEC is set to: /cpu2017-1.1.9
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda2       ext4  877G   53G  780G   7% /

```

```

-----
20. /sys/devices/virtual/dmi/id
   Vendor:          Epsilon Sp. z o.o.
   Product:         eterio 220 RC3
   Product Family: Not specified
   Serial:          02501356

```

```

-----
21. dmidecode
Additional information from dmidecode 3.6 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 M321R8GA0PB2-CCPWF 64 GB 2 rank 6400, configured at 4000

```

```

-----
22. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:      American Megatrends International, LLC.
   BIOS Version:     06.09.01
   BIOS Date:        08/18/2025

```

Compiler Version Notes

```

=====
C | 519.lbm_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 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
=====

```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Date: Mar-2026

Test Sponsor: Epsilon IT Sp. z o.o.

Hardware Availability: Dec-2023

Tested by: Epsilon IT Sp. z o.o.

Software Availability: Jan-2026

Compiler Version Notes (Continued)

=====
C++ | 508.namd_r(base, peak) 510.parest_r(base, peak)
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 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 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 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 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
=====

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

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 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 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
=====

Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026

Base Compiler Invocation (Continued)

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 -xsaphirerapids -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
```

C++ benchmarks:

```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsaphirerapids -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 -xsaphirerapids -Ofast -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
```

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Date: Mar-2026

Test Sponsor: Epsilon IT Sp. z o.o.

Hardware Availability: Dec-2023

Tested by: Epsilon IT Sp. z o.o.

Software Availability: Jan-2026

Base Optimization Flags (Continued)

Fortran benchmarks (continued):

```
-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 -xsapfirerapids -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 -xsapfirerapids -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 -xsapfirerapids -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
```

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 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Sponsor: Epsilon IT Sp. z o.o.

Tested by: Epsilon IT Sp. z o.o.

Test Date: Mar-2026

Hardware Availability: Dec-2023

Software Availability: Jan-2026

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: basepeak = yes

C++ benchmarks:

508.namd_r: basepeak = yes

510.parest_r: -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:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

554.roms_r: -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++:

511.povray_r: -w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1) -fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)

(Continued on next page)



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Epsilon IT Sp. z o.o.

SPECrate®2017_fp_base = 459

eterio 220 RC3 (2.00 GHz, Intel Xeon Silver 4416+)

SPECrate®2017_fp_peak = 476

CPU2017 License: 9081

Test Date: Mar-2026

Test Sponsor: Epsilon IT Sp. z o.o.

Hardware Availability: Dec-2023

Tested by: Epsilon IT Sp. z o.o.

Software Availability: Jan-2026

Peak Optimization Flags (Continued)

511.povray_r (continued):

```
-flto -Ofast -xCORE-AVX512 -ffast-math -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
```

526.blender_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xsaphirerapids -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-ic2025-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Epsilon-Platform-Flags-RevA-Feb-2026-For-Intel-Processors.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2025-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Epsilon-Platform-Flags-RevA-Feb-2026-For-Intel-Processors.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.

Tested with SPEC CPU®2017 v1.1.9 on 2026-03-27 17:02:56-0400.

Report generated on 2026-04-22 12:57:17 by CPU2017 PDF formatter v6716.

Originally published on 2026-04-22.