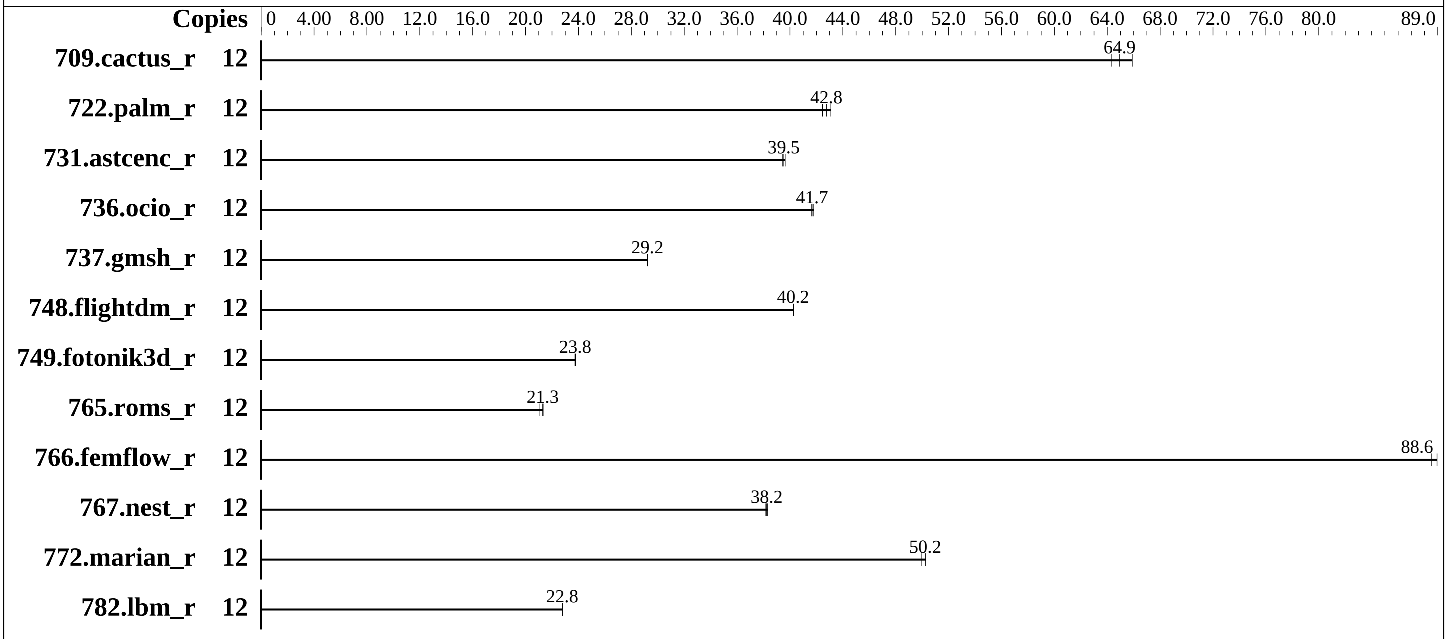
SPEC CPU®2026 Floating Point Rate Result

Fsas Technologies Inc.
(Test Sponsor: Fujitsu)
PRIMERGY RX1330 M6,
Intel Xeon 6333P, 3.1 GHz

SPECrate®2026_fp_base = 38.5

SPECrate®2026_fp_peak = Not Run

CPU2026 License:	19	**Test Date:**	Jun-2026
Test Sponsor:	Fujitsu	**Hardware Availability:**	Apr-2025
Tested by:	Fsas Technologies Inc.	**Software Availability:**	Apr-2026



Hardware

CPU Name:	Xeon 6333P
Max MHz:	4700
Nominal:	3100
Enabled:	6 cores, 1 chip, 2 threads/core
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:	18 MB I+D on chip per chip
Other:	None
Memory:	64 GB (2 x 32 GB 2Rx8 PC5-4800B-E, running at 4400)
Storage:	1 x SATA M.2 SSD, 960 GB
Cooling:	Air
Other:	None

Software

OS:	SUSE Linux Enterprise Server 15 SP6 6.4.0-150600.21-default
Compiler:	C/C++: Version 2026.0 of Intel oneAPI DPC++/C++ Compiler for Linux; Fortran: Version 2026.0 of Intel Fortran Compiler for Linux
Compiler Category:	Vendor
Firmware:	Fujitsu BIOS Version V5.0.0.32 R2.6.0 for D4133-A1x. Released Jun-2026
File System:	xfs
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	Not Applicable
Other:	jemalloc memory allocator v5.3
Power Management:	BIOS set to prefer performance at the cost of additional power usage

Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
709.cactus_r	12	156	65.9	160	64.3	**159**	**64.9**							
722.palm_r	12	**370**	**42.8**	368	43.1	373	42.5							
731.astcenc_r	12	255	39.5	254	39.6	**255**	**39.5**							
736.ocio_r	12	**252**	**41.7**	252	41.6	251	41.8							
737.gmsh_r	12	189	29.2	**189**	**29.2**	188	29.3							
748.flightdm_r	12	214	40.2	**214**	**40.2**	213	40.3							
749.fotonik3d_r	12	584	23.7	584	23.8	**584**	**23.8**							
765.roms_r	12	**887**	**21.3**	886	21.3	896	21.1							
766.femflow_r	12	**199**	**88.6**	199	88.6	198	88.9							
767.nest_r	12	248	38.3	**249**	**38.2**	249	38.2							
772.marian_r	12	**377**	**50.2**	377	50.3	380	49.9							
782.lbm_r	12	302	22.8	302	22.8	**302**	**22.8**							

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

Submit Notes

```
The taskset mechanism was used to bind copies to processors. The config file option 'submit'
was used to generate taskset 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 = "/home/benchmark/cpu2026/lib"
MALLOC_CONF = "retain:true"
```

General Notes

```
Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM
memory using CentOS Stream 9.
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
```

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General Notes (Continued)

```
jemalloc, a general purpose malloc implementation
built with the CentOS Stream 9, and the system compiler gcc 11.5.0
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

Platform Notes

```
BIOS Settings:
Fan Control = Full
Total Memory Encryption = Disabled

Sysinfo program /home/benchmark/cpu2026/bin/sysinfo
Rev: 779ab21020787073335a329f3a45e2cd
running on localhost Wed Jun 10 09:39:04 2026

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

------------------------------------------------------------
Table of contents
------------------------------------------------------------
 1. uname -srvm
 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 254 (254.10+suse.84.ge8d77af424)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
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 -srvm
  Linux 6.4.0-150600.21-default #1 SMP PREEMPT_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09) x86_64
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
2. w
   09:39:04 up 13:53,  1 user,  load average: 3.31, 9.20, 11.01
  USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1     -                Tue19   13:51m  1.36s  0.19s -bash

------------------------------------------------------------
3. Username
  From environment variable $USER:  root

------------------------------------------------------------
4. ulimit -a
  core file size          (blocks, -c) unlimited
  data seg size           (kbytes, -d) unlimited
  scheduling priority             (-e) 0
  file size               (blocks, -f) unlimited
  pending signals                 (-i) 254382
  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) 254382
  virtual memory          (kbytes, -v) unlimited
  file locks                      (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize=42
 login -- root
 -bash
 -bash
 runcpu --nobuild --action validate --define default-platform-flags --copies 12 -c
   ic2026.0-core-avx2-cpu2026-1.0.1-rate-20260429.cfg --define smt-on --define cores=6 --define
   physicallogical --define no-numa --tune base -o all --define drop_caches -n 3 fprate
 runcpu --nobuild --action validate --define default-platform-flags --copies 12 --configfile
   ic2026.0-core-avx2-cpu2026-1.0.1-rate-20260429.cfg --define smt-on --define cores=6 --define
   physicallogical --define no-numa --tune base --output_format all --define drop_caches --iterations 3
   --nopower --runmode rate --tune base --size refrate fprate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2026.001/templogs/preenv.fprate.001.0.log --lognum 001.0 --from_runcpu 2
 specperl $SPEC/bin/sysinfo
$SPEC = /home/benchmark/cpu2026
```

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Test Sponsor: Fujitsu
Tested by: Fsas Technologies Inc.
Test Date: Jun-2026
Hardware Availability: Apr-2025
Software Availability: Apr-2026

Platform Notes (Continued)

```
------------------------------------------------------------
6. /proc/cpuinfo
    model name      : Intel(R) Xeon(R) 6333P
    vendor_id       : GenuineIntel
    cpu family      : 6
    model           : 183
    stepping        : 1
    microcode       : 0x133
    bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
    cpu cores       : 6
    siblings        : 12
    1 physical ids (chips)
    12 processors (hardware threads)
    physical id 0: core ids 0-5
    physical id 0: apicids 0-11
  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 2.39.3:
  Architecture:                         x86_64
  CPU op-mode(s):                       32-bit, 64-bit
  Address sizes:                        46 bits physical, 48 bits virtual
  Byte Order:                           Little Endian
  CPU(s):                               12
  On-line CPU(s) list:                  0-11
  Vendor ID:                            GenuineIntel
  BIOS Vendor ID:                       Intel(R) Corporation
  Model name:                           Intel(R) Xeon(R) 6333P
  BIOS Model name:                      Intel(R) Xeon(R) 6333P   CPU @ 4.5GHz
  BIOS CPU family:                      179
  CPU family:                           6
  Model:                                183
  Thread(s) per core:                   2
  Core(s) per socket:                   6
  Socket(s):                            1
  Stepping:                             1
  CPU(s) scaling MHz:                   30%
  CPU max MHz:                          5200.0000
  CPU min MHz:                          800.0000
  BogoMIPS:                             6220.80
  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
```

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Platform Notes (Continued)

```
                                  pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
                                  xtpr pdcm sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
                                  xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb ssbd
                                  ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad
                                  fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid rdseed adx smap
                                  clflushopt clwb intel_pt sha_ni xsaveopt xsavec xgetbv1 xsaves
                                  split_lock_detect user_shstk avx_vnni dtherm ida arat pln pts hwp
                                  hwp_notify hwp_act_window hwp_epp hwp_pkg_req hfi vnmi umip pku ospke
                                  waitpkg gfni vaes vpclmulqdq tme rdpid movdiri movdir64b fsrm
                                  md_clear serialize pconfig arch_lbr ibt flush_l1d arch_capabilities
  Virtualization:                      VT-x
  L1d cache:                           288 KiB (6 instances)
  L1i cache:                           192 KiB (6 instances)
  L2 cache:                            12 MiB (6 instances)
  L3 cache:                            18 MiB (1 instance)
  NUMA node(s):                        1
  NUMA node0 CPU(s):                   0-11
  Vulnerability Gather data sampling:  Not affected
  Vulnerability Itlb multihit:         Not affected
  Vulnerability L1tf:                  Not affected
  Vulnerability Mds:                   Not affected
  Vulnerability Meltdown:              Not affected
  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; RSB filling;
                                       PBRSB-eIBRS SW sequence; BHI BHI_DIS_S
  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     288K   12 Data            1    64        1             64
      L1i       32K     192K    8 Instruction     1    64        1             64
      L2         2M      12M   16 Unified         2  2048        1             64
      L3        18M      18M    9 Unified         3 32768        1             64

 ------------------------------------------------------------
 8. numactl --hardware
 NOTE: a numactl 'node' might or might not correspond to a physical chip.
   available: 1 nodes (0)
   node 0 cpus: 0-11
   node 0 size: 63621 MB
   node 0 free: 62860 MB
```

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Platform Notes (Continued)

```
  node distances:
  node   0
    0:  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       65148564 kB

------------------------------------------------------------
10. who -r
  run-level 3 Jun 9 19:46

------------------------------------------------------------
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
  Default Target  Status
  multi-user      running

------------------------------------------------------------
12. Services, from systemctl list-unit-files
  STATE            UNIT FILES
  enabled          apparmor auditd cron getty@ irqbalance issue-generator kbdsettings lvm2-monitor postfix
                   purge-kernels rollback sep5 sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4
                   wickedd-dhcp6 wickedd-nanny
  enabled-runtime  systemd-remount-fs
  disabled         YaST2-Firstboot YaST2-Second-Stage autofs autoyast-initscripts blk-availability
                   boot-sysctl ca-certificates chrony-wait chronyd console-getty cups cups-browsed
                   debug-shell display-manager ebtables exchange-bmc-os-info firewalld fsidd gpm grub2-once
                   haveged ipmi ipmievd issue-add-ssh-keys kdump kdump-early kdump-notify kexec-load klog
                   lunmask man-db-create multipathd nfs nfs-blkmap nscd rpcbind rpmconfigcheck rsyncd rsyslog
                   serial-getty@ smartd smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures
                   systemd-confext systemd-network-generator systemd-sysext systemd-time-wait-sync
                   systemd-timesyncd vncserver@
  indirect         systemd-userdbd wickedd

------------------------------------------------------------
13. Linux kernel boot-time arguments, from /proc/cmdline
  BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
  root=UUID=69cd5337-d082-4cee-8e02-ec4054c30a5a
  splash=silent
  resume=/dev/disk/by-uuid/a5855c9d-a4a0-4b74-baec-bd075bde416b
  quiet
  security=apparmor
  crashkernel=347M,high
  crashkernel=72M,low
  mitigations=auto

------------------------------------------------------------
```

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Platform Notes (Continued)

```
14. cpupower frequency-info
  analyzing CPU 8:
    current policy: frequency should be within 800 MHz and 5.20 GHz.
                    The governor "powersave" may decide which speed to use
                    within this range.
    boost state support:
      Supported: yes
      Active: yes

------------------------------------------------------------
15. sysctl
  kernel.numa_balancing                0
  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

------------------------------------------------------------
16. /sys/kernel/mm/transparent_hugepage
  defrag          always defer defer+madvise [madvise] never
  enabled         [always] madvise 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
```

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Platform Notes (Continued)

```
 ------------------------------------------------------------
 18. OS release
   From /etc/*-release /etc/*-version
   os-release SUSE Linux Enterprise Server 15 SP6

 ------------------------------------------------------------
 19. Disk information
 SPEC is set to: /home/benchmark/cpu2026
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda5      xfs   751G   71G  681G  10% /home

 ------------------------------------------------------------
 20. /sys/devices/virtual/dmi/id
     Vendor:         FUJITSU
     Product:        PRIMERGY RX1330 M6
     Product Family: SERVER
     Serial:         xxxxxxxxxx

 ------------------------------------------------------------
 21. dmidecode
   Additional information from dmidecode 3.4 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:
     2x Samsung M324R4GA3BB0-CQKOL 32 GB 2 rank 4800, configured at 4400


 ------------------------------------------------------------
 22. BIOS
 (This section combines info from /sys/devices and dmidecode.)
    BIOS Vendor:       FUJITSU // American Megatrends International, LLC.
    BIOS Version:      V5.0.0.32 R2.6.0 for D4133-A1x
    BIOS Date:         04/23/2026
    BIOS Revision:     2.6
```

Compiler Version Notes

```
==============================================================================
C       | 782.lbm_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
```

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Compiler Version Notes (Continued)

```
==============================================================================
C++     | 731.astcenc_r(base) 736.ocio_r(base) 748.flightdm_r(base)
        | 766.femflow_r(base) 767.nest_r(base) 772.marian_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
C++, C  | 709.cactus_r(base) 737.gmsh_r(base)
------------------------------------------------------------------------------
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64,
  Version 2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------

==============================================================================
Fortran | 722.palm_r(base) 749.fotonik3d_r(base) 765.roms_r(base)
------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version
  2026.0.0 Build 20260331
Copyright (C) 1985-2026 Intel Corporation. All rights reserved.
------------------------------------------------------------------------------
```

Base Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Benchmarks using both C and C++:
icpx icx

Base Portability Flags

737.gmsh_r: -fno-associative-math

Base Optimization Flags

C benchmarks:
-m64 -std=c18 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xCORE-AVX2 -O3 -ffp-model=fast -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc-5.3.0/lib -ljemalloc

C++ benchmarks:
-m64 -std=c++17 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xCORE-AVX2 -O3 -ffp-model=fast -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -L/usr/local/jemalloc-5.3.0/lib -ljemalloc

Fortran benchmarks:
-m64 -stand f18 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xCORE-AVX2 -O3 -ffp-model=fast -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
-auto -L/usr/local/jemalloc-5.3.0/lib -ljemalloc

Benchmarks using both C and C++:
-m64 -std=c++17 -std=c18 -Wl,-z,muldefs
-Wl,-plugin-opt=-inline-threshold=1500 -xCORE-AVX2 -O3 -ffp-model=fast
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc-5.3.0/lib -ljemalloc

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2026/results/flags/Intel-ic2026-official-linux64-v1.1.html
http://www.spec.org/cpu2026/results/flags/Fsas-Platform-Settings-V1.0-RPL-R-RevB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2026/results/flags/Intel-ic2026-official-linux64-v1.1.xml
http://www.spec.org/cpu2026/results/flags/Fsas-Platform-Settings-V1.0-RPL-R-RevB.xml

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