SPEC CPU®2026 Floating Point Speed Result

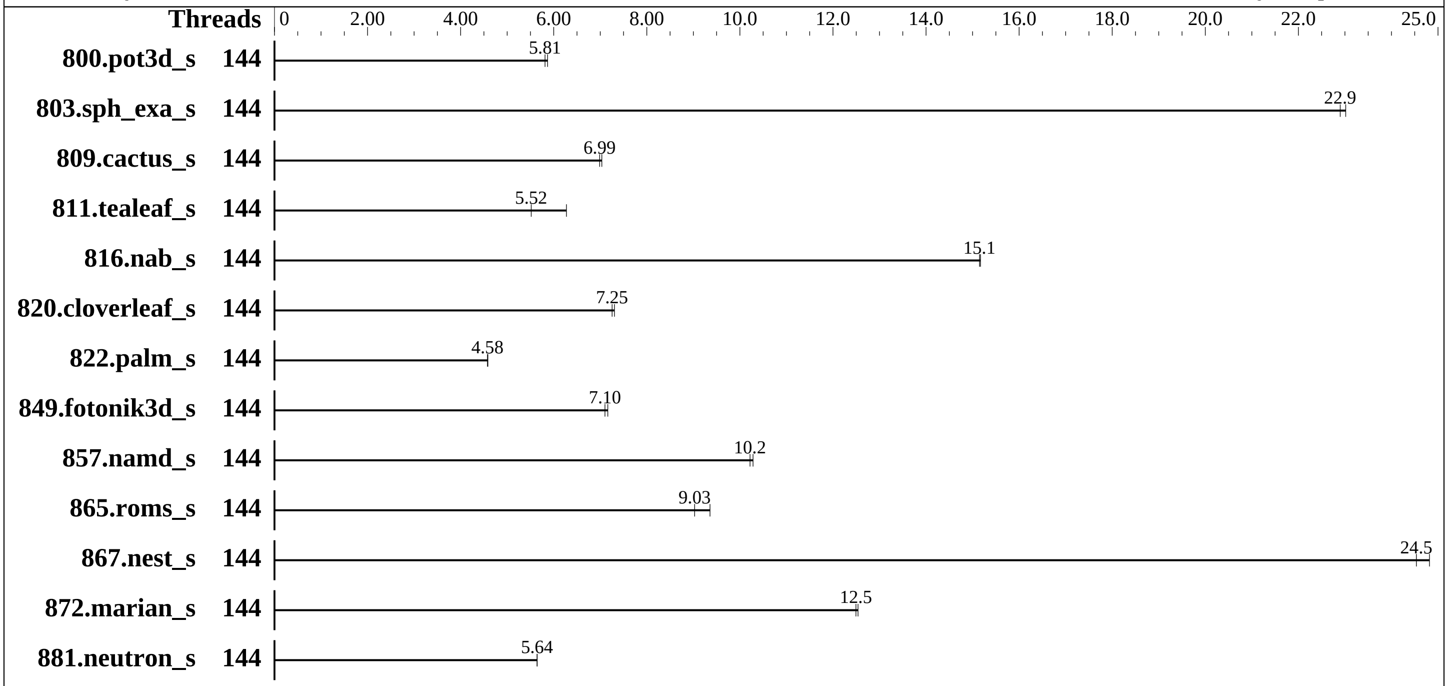
xFusion

FusionServer 2288 V8 (Intel Xeon 6736P)

SPECspeed®2026_fp_base = 9.10

SPECspeed®2026_fp_peak = Not Run

CPU2026 License:	6488	**Test Date:**	Oct-2026
Test Sponsor:	xFusion	**Hardware Availability:**	May-2025
Tested by:	xFusion	**Software Availability:**	Apr-2026



Hardware

CPU Name:	Intel Xeon 6736P
Max MHz:	4100
Nominal:	2000
Enabled:	72 cores, 2 chips, 2 threads/core
Orderable:	1,2 chips
Cache L1:	64 KB I + 48 KB D on chip per core
L2:	2 MB I+D on chip per core
L3:	144 MB I+D on chip per chip
Other:	None
Memory:	512 GB (16 x 32 GB 2Rx8 PC5-6400B-R)
Storage:	1 x 960 GB SATA SSD
Cooling:	Air
Other:	None

Software

OS:	Red Hat Enterprise Linux 9.4 (Plow) 5.14.0-427.13.1.el9_4.x86_64
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:	Version 01.31.03.20 released Sep-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 and OS set to prefer performance at the cost of additional power usage.

SPEC CPU®2026 Floating Point Speed Result

xFusion

FusionServer 2288 V8 (Intel Xeon 6736P)

SPECspeed®2026_fp_base = 9.10

SPECspeed®2026_fp_peak = Not Run

CPU2026 License:	6488	**Test Date:**	Oct-2026
Test Sponsor:	xFusion	**Hardware Availability:**	May-2025
Tested by:	xFusion	**Software Availability:**	Apr-2026

Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
800.pot3d_s	144	115	5.87	**116**	**5.81**									
803.sph_exa_s	144	**54.1**	**22.9**	53.8	23.0									
809.cactus_s	144	160	7.03	**161**	**6.99**									
811.tealeaf_s	144	**101**	**5.52**	88.8	6.27									
816.nab_s	144	**74.3**	**15.1**	74.2	15.2									
820.cloverleaf_s	144	117	7.30	**118**	**7.25**									
822.palm_s	144	**268**	**4.58**	268	4.59									
849.fotonik3d_s	144	**92.9**	**7.10**	92.2	7.16									
857.namd_s	144	141	10.3	**142**	**10.2**									
865.roms_s	144	116	9.36	**121**	**9.03**									
867.nest_s	144	**88.0**	**24.5**	87.0	24.8									
872.marian_s	144	86.3	12.5	**86.6**	**12.5**									
881.neutron_s	144	144	5.65	**144**	**5.64**									

SPECspeed®2026_fp_base = 9.10

SPECspeed®2026_fp_peak = Not Run

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

Operating System Notes

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

Environment Variables Notes

```
Environment variables set by runcpu before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/home/cpu2026/lib"
MALLOC_CONF = "retain:true"
OMP_STACKSIZE = "192M"
```

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
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.
```

(Continued on next page)

General Notes (Continued)

```
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 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 configuration:
Performance Profile Set to Load Balance
LLC Prefetch Set to Enabled
Adjacent Cache Prefetch Set to Disabled
Latency Optimized Mode Set to Enabled

Sysinfo program /home/cpu2026/bin/sysinfo
Rev: 779ab21020787073335a329f3a45e2cd
running on localhost Sun Oct 18 01:06:56 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 252 (252-32.el9_4)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS
```

(Continued on next page)

Platform Notes (Continued)

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

------------------------------------------------------------
1. uname -srvm
  Linux 5.14.0-427.13.1.el9_4.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 10 10:29:16 EDT 2024 x86_64

------------------------------------------------------------
2. w
   01:06:56 up  1:36,  1 user,  load average: 69.82, 41.16, 33.55
  USER     TTY        LOGIN@   IDLE   JCPU   PCPU WHAT
  root     tty1      23:30    1:35m  1.09s  0.01s bash speed-2026.sh

------------------------------------------------------------
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) 2060050
  max locked memory           (kbytes, -l) 64
  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) 2060050
  virtual memory              (kbytes, -v) unlimited
  file locks                          (-x) unlimited

------------------------------------------------------------
5. sysinfo process ancestry
 /usr/lib/systemd/systemd --switched-root --system --deserialize 31
 login -- root
 -bash
 bash speed-2026.sh
 runcpu --nobuild --reportable --action validate --define default-platform-flags -c
   ic2026.0-graniterapids-cpu2026-1.0.1-speed-20260429.cfg --threads 144 --define cores=144 -o all --define
   drop_caches fpspeed --tune base
 runcpu --nobuild --reportable --action validate --define default-platform-flags --configfile
   ic2026.0-graniterapids-cpu2026-1.0.1-speed-20260429.cfg --threads 144 --define cores=144 --output_format
```

(Continued on next page)

Platform Notes (Continued)

```
    all --define drop_caches --tune base --nopower --runmode speed --tune base --size refspeed fpspeed
    --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2026.002/templogs/preenv.fpspeed.002.0.log --lognum 002.0
    --from_runcpu 2
  specperl $SPEC/bin/sysinfo
 $SPEC = /home/cpu2026

 ------------------------------------------------------------
 6. /proc/cpuinfo
     model name      : Intel(R) Xeon(R) 6736P
     vendor_id       : GenuineIntel
     cpu family      : 6
     model           : 173
     stepping        : 1
     microcode       : 0x1000434
     bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs
     cpu cores       : 36
     siblings        : 72
     2 physical ids (chips)
     144 processors (hardware threads)
     physical id 0: core ids 0-35
     physical id 1: core ids 0-35
     physical id 0: apicids 0-71
     physical id 1: apicids 128-199
   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:                   52 bits physical, 57 bits virtual
   Byte Order:                      Little Endian
   CPU(s):                          144
   On-line CPU(s) list:             0-143
   Vendor ID:                       GenuineIntel
   BIOS Vendor ID:                  Intel(R) Corporation
   Model name:                      Intel(R) Xeon(R) 6736P
   BIOS Model name:                 Intel(R) Xeon(R) 6736P
   CPU family:                      6
   Model:                           173
   Thread(s) per core:              2
   Core(s) per socket:              36
   Socket(s):                       2
   Stepping:                        1
   CPU(s) scaling MHz:              89%
```

(Continued on next page)

Platform Notes (Continued)

```
CPU max MHz:                          4100.0000
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 aperfmperf tsc_known_freq pni pclmulqdq
                                      dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm
                                      pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave
                                      avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2
                                      cdp_l3 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
                                      hwp hwp_act_window hwp_epp hwp_pkg_req 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:                            3.4 MiB (72 instances)
L1i cache:                            4.5 MiB (72 instances)
L2 cache:                             144 MiB (72 instances)
L3 cache:                             288 MiB (2 instances)
NUMA node(s):                         2
NUMA node0 CPU(s):                    0-35,72-107
NUMA node1 CPU(s):                    36-71,108-143
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 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 Not affected
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
```

(Continued on next page)

xFusion

FusionServer 2288 V8 (Intel Xeon 6736P)

SPECspeed®2026_fp_base = 9.10

SPECspeed®2026_fp_peak = Not Run

CPU2026 License: 6488
Test Sponsor: xFusion
Tested by: xFusion
Test Date: Oct-2026
Hardware Availability: May-2025
Software Availability: Apr-2026

Platform Notes (Continued)

```
     L1d       48K     3.4M   12 Data            1     64         1             64
     L1i       64K     4.5M   16 Instruction     1     64         1             64
     L2         2M     144M   16 Unified         2   2048         1             64
     L3       144M     288M   16 Unified         3 147456         1             64

------------------------------------------------------------
8. numactl --hardware
NOTE: a numactl 'node' might or might not correspond to a physical chip.
  available: 2 nodes (0-1)
  node 0 cpus: 0-35,72-107
  node 0 size: 257036 MB
  node 0 free: 255151 MB
  node 1 cpus: 36-71,108-143
  node 1 size: 258015 MB
  node 1 free: 251220 MB
  node distances:
  node   0   1
    0:  10  21
    1:  21  10

------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       527413272 kB

------------------------------------------------------------
10. who -r
  run-level 3 Oct 17 23:30

------------------------------------------------------------
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 chronyd crond
                   dbus-broker firewalld getty@ insights-client-boot irqbalance kdump low-memory-monitor
                   mdmonitor microcode nis-domainname nvmefc-boot-connections rhsmcertd rsyslog rtkit-daemon
                   selinux-autorelabel-mark smartd sshd sssd sysstat systemd-boot-update
                   systemd-network-generator tuned udisks2 upower
  enabled-runtime  systemd-remount-fs
  disabled         arp-ethers canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot
                   chrony-wait chronyd-restricted console-getty cpupower debug-shell dnf-system-upgrade
                   kvm_stat man-db-restart-cache-update nftables nvmf-autoconnect pesign rdisc rhcd rhsm
                   rhsm-facts rpmdb-rebuild selinux-check-proper-disable serial-getty@ sshd-keygen@
                   systemd-boot-check-no-failures systemd-pstore systemd-sysext
```

(Continued on next page)

Platform Notes (Continued)

```
  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)/boot/vmlinuz-5.14.0-427.13.1.el9_4.x86_64
  root=UUID=3de58381-ec76-4679-aff9-b9be496c72a0
  ro
  crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
  resume=UUID=a06b30ac-ae42-4b65-a315-98b470b6654f

------------------------------------------------------------
14. cpupower frequency-info
  analyzing CPU 123:
    current policy: frequency should be within 800 MHz and 4.10 GHz.
                    The governor "performance" may decide which speed to use
                    within this range.
    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
  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
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
17. /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

------------------------------------------------------------
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: /home/cpu2026
  Filesystem     Type  Size  Used Avail Use% Mounted on
  /dev/sda2      xfs   600G   48G  553G   8% /

------------------------------------------------------------
21. /sys/devices/virtual/dmi/id
    Vendor:         XFUSION
    Product:        2288 V8
    Product Family: Birch Stream

------------------------------------------------------------
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:
    3x Samsung M321R4GA3EB2-CCPPC 32 GB 2 rank 6400
    1x Samsung M321R4GA3EB2-CCPWC 32 GB 2 rank 6400
    12x Samsung M321R4GA3EB2-CCPWF 32 GB 2 rank 6400
```

(Continued on next page)

Platform Notes (Continued)

```
------------------------------------------------------------
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       XFUSION
   BIOS Version:      01.31.03.20
   BIOS Date:         09/08/2026
   BIOS Revision:     3.20
```

Compiler Version Notes

```
==============================================================================
C       | 811.tealeaf_s(base) 816.nab_s(base) 881.neutron_s(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++     | 803.sph_exa_s(base) 857.namd_s(base) 867.nest_s(base)
        | 872.marian_s(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  | 809.cactus_s(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 | 800.pot3d_s(base) 820.cloverleaf_s(base) 822.palm_s(base)
        | 849.fotonik3d_s(base) 865.roms_s(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 Optimization Flags

C benchmarks:
```
-m64 -std=c18 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xgraniterapids -mprefer-vector-width=512 -O3 -ffp-model=fast -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -L/usr/local/jemalloc-5.3.0/lib -ljemalloc
```

C++ benchmarks:
```
-m64 -std=c++17 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xgraniterapids -mprefer-vector-width=512 -O3 -ffp-model=fast -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -pthread
-fiopenmp -DSPEC_OPENMP -L/usr/local/jemalloc-5.3.0/lib -ljemalloc
```

Fortran benchmarks:
```
-m64 -stand f18 -Wl,-z,muldefs -Wl,-plugin-opt=-inline-threshold=1500
-xgraniterapids -mprefer-vector-width=512 -O3 -ffp-model=fast -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -DSPEC_OPENMP
-fiopenmp -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 -xgraniterapids
-mprefer-vector-width=512 -O3 -ffp-model=fast -flto -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP
-pthread -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/xFusion-Platform-Settings-GNR-V1.7.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/xFusion-Platform-Settings-GNR-V1.7.xml

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

Tested with SPEC CPU®2026 v1.0.1 on 2026-10-17 13:06:56-0400.
Report generated on 2026-11-04 10:51:10 by CPU2026 PS formatter (86729d3b).
Originally published on 2026-11-03.