## SPEC CPU®2017 Floating Point Rate Result

xFusion

FusionServer 2288H V7 (Intel Xeon Gold 6438N)

**SPECrater®2017_fp_base = 684**

**SPECrater®2017_fp_peak = 685**

### Hardware

- **CPU Name:** Intel Xeon Gold 6438N
- **Max MHz:** 3600
- **Nominal:** 2000
- **Enabled:** 64 cores, 2 chips, 2 threads/core
- **Orderable:** 1.2 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
- **Memory:** 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)
- **Storage:** 1 x 1920 GB SATA SSD
- **Other:** None

### Software

- **OS:** Red Hat Enterprise Linux release 9.0 (Plow)
  5.14.0-70.13.1.el9_0.x86_64
- **Compiler:** C/C++: Version 2023.0 of Intel oneAPI DPC++/C++
  Compiler for Linux; Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;
- **Parallel:** No
- **Firmware:** Version 2.0.0.55 Released Mar-2023
- **File System:** xfs
- **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
xFusion

FusionServer 2288H V7 (Intel Xeon Gold 6438N)

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<td>700</td>
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</tr>
</tbody>
</table>

**SPECrate®2017_fp_base = 684**

**SPECrate®2017_fp_peak = 685**

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 = "/spec2017-icc2023.0/lib/intel64:/spec2017-icc2023.0/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.:
umactl --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.

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

xFusion
FusionServer 2288H V7 (Intel Xeon Gold 6438N)

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

SPECrate®2017_fp_base = 684
SPECrate®2017_fp_peak = 685

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

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

Platform Notes

BIOS configuration:
Performance Profile Set to Performance
SNC Set to Enable SNC2 (2-clusters)

Sysinfo program /spec2017-icc2023.0/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Fri Jul 28 14:58:42 2023

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

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4. ulimit -a
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10. who -r
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12. Failed units, from systemd list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. sysctl
17. /sys/kernel/mm/transparent_hugepage
18. /sys/kernel/mm/transparent_hugepage/transparent
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

1. uname -a
Linux localhost.localdomain 5.14.0-70.13.1.el9_0.x86_64 #1 SMP PREEMPT Thu Apr 14 12:42:38 EDT 2022 x86_64 x86_64 GNU/Linux

2. w
14:58:42 up 3:15, 1 user, load average: 84.70, 117.35, 123.29
USER  TTY  LOGIN@  IDLE  JCPU  PCPU WHAT
root  tty1  11:50  3:08m  1.36s  0.08s -bash

(Continued on next page)
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) 2060103
   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) 2060103
   virtual memory  (kbytes, -v) unlimited
   file locks  (-x) unlimited

5. sysinfo process ancestry
   /usr/lib/systemd/systemd rhgb --switched-root --system --deserialize 31
   login -- root
   -bash
   -bash
   runcpu --define default-platform-flags --copies 128 --ic2023.0-lin-sapphirerapids-rate-20221201.cfg
   --define smt-on --define cores=64 --define physicalfirst --define invoke_with_interleave --define
drop_caches --tune base,peak --iterations 3 --o all fprate
   runcpu --define default-platform-flags --copies 128 --configfile
   ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=64 --define physicalfirst
   --define invoke_with_interleave --define drop_caches --tune base,peak --iterations 3 --o all fprate
   --nopower --runmode rate --tune base,peak --size refrate fprate --nopreenv --note-preenv --logfile
   $SPEC/tmp/CPU2017.103/templogs/preenv.fprate.103.0.log --lognum 103.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
   $SPEC = /spec2017-icc2023.0

6. /proc/cpuinfo
   model name : Intel(R) Xeon(R) Gold 6438N
   vendor_id : GenuineIntel
   cpu family : 6
   model : 143
   stepping : 7
   microcode : 0x2b000111
   bugs : spectre_v1 spectre_v2 spec_store_bypass swapgs
   cpu cores : 32
   siblings : 64
   2 physical ids (chips)
   128 processors (hardware threads)
   physical id 0: core ids 0-31
   physical id 1: core ids 0-31
   physical id 0: apicids 0-63
   physical id 1: apicids 128-191

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
virtualized systems. Use the above data carefully.

(Continued on next page)
Platform Notes (Continued)

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): 128
On-line CPU(s) list: 0-127
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel(R) Corporation
Model name: Intel(R) Xeon(R) Gold 6438N
CPU family: 6
Model: 143
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s): 2
Stepping: 7
BogoMIPS: 4000.00

Flags:

fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pse 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 cnuvpi

Virtualization: VT-x

L1d cache: 3 MiB (64 instances)
L1i cache: 2 MiB (64 instances)
L2 cache: 128 MiB (64 instances)
L3 cache: 120 MiB (2 instances)
NUMA node(s): 4
NUMA node0 CPU(s): 0-15,64-79
NUMA node1 CPU(s): 16-31,80-95
NUMA node2 CPU(s): 32-47,96-111
NUMA node3 CPU(s): 48-63,112-127

Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl
Vulnerability Spectre v1: Mitigation; usercopy/swapsgs barriers and __user pointer sanitization
Vulnerability Spectre v2: Mitigation; Enhanced IBRS, IBPB conditional, RSB filling
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

From lscpu --cache:

(Continued on next page)
## SPEC CPU®2017 Floating Point Rate Result

**xFusion**

FusionServer 2288H V7 (Intel Xeon Gold 6438N)

<table>
<thead>
<tr>
<th>SPECrate®2017_fp_base</th>
<th>= 684</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate®2017_fp_peak</td>
<td>= 685</td>
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**CPU2017 License:** 6488  
**Test Sponsor:** xFusion  
**Tested by:** xFusion

**Test Date:** Jul-2023  
**Hardware Availability:** Jan-2023  
**Software Availability:** Dec-2022

### Platform Notes (Continued)

<table>
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<tr>
<th>NAME</th>
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<th>ALL-SIZE</th>
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<td>120M</td>
<td>15</td>
<td>Unified</td>
<td>3</td>
<td>65536</td>
<td>1</td>
<td>64</td>
</tr>
</tbody>
</table>

---

8. numactl --hardware  
NOTE: a numactl 'node' might or might not correspond to a physical chip.  
available: 4 nodes (0-3)  
node 0 cpus: 0-15, 64-79  
node 0 size: 128079 MB  
node 0 free: 119013 MB  
node 1 cpus: 16-31, 80-95  
node 1 size: 129017 MB  
node 1 free: 121945 MB  
node 2 cpus: 32-47, 96-111  
node 2 size: 129017 MB  
node 2 free: 121937 MB  
node 3 cpus: 48-63, 112-127  
node 3 size: 128969 MB  
node 3 free: 121944 MB  
node distances:  
node 0: 10 12 21 21  
node 1: 12 10 21 21  
node 2: 21 21 10 12  
node 3: 21 21 12 10

---

9. /proc/meminfo  
MemTotal: 527445256 kB

---

10. who -r  
run-level 3 Jul 28 11:43

---

11. Systemd service manager version: systemd 250 (250-6.e19_0)  
Default Target:  
multi-user: degraded

---

12. Failed units, from systemctl list-units --state=failed  
UNIT: LOAD ACTIVE SUB DESCRIPTION  
* dnf-makecache.service loaded failed failed dnf makecache  
* sep5.service loaded failed failed systemctl script to load sep5 driver at boot time

---

13. Services, from systemctl list-unit-files  
STATE UNIT FILES  
enabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon auditd avahi-daemon bluetooth chronyd crond cups dbus-broker gdm gettext@ insights-client-boost irqbalance iscsi iscsi-onboot kdump libstoragemgmt low-memory-monitor lvmd-monitor mcelog mdmonitor microcode multipathd nis-domainname nmrfc-boot-connections ostree-remount power-profiles-dl qemu-guest-agent rhamcertd rsyslog rtkit-daemon selinux-autorelabel-mark sep5 smartd sshhd ssad switcheroo-control sysstat systemd-network-generator udisks2 upower vgauthd vmtoolsd  
enabled-runtime systemd-remount-fs  
disabled arp-ethers blk-availability britty canberra-system-bootup canberra-system-shutdown

(Continued on next page)
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Platform Notes (Continued)
canberra-system-shutdown-reboot chrony-wait cni-dhcp console-getty cpupower cups-browsed
dbus-daemon debug-shell dnsmasq firewallld iprmdump iprinti iprupdate iscsid iscsiui kpatch
kvm_stat ledmon man-db-restart-cache-update nftables nvme-autoconnect podman
podman-auto-update podman-restart pscacct ras-mc-ctl rasdaemon rdisc rhcd rhsm rhm-facts
rpmdb-rebuild serial-getty@ speech-dispatcherd sshd-keygen@ systemd-boot-check-no-failures
systemd-pstore systemd-sysext wpa_supplicant
indirect spice-vdagentd sssd-autofs sssd-kcm sssd-ns sssd-pac sssd-pam sssd-ss sssd-sudo

14. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt3)/boot/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
root=UUID=cc4bab05-907e-44ef-b818-2b2874390234
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=UUID=5ba347ca-8beb-4f6e-9c11-de63dc4ddf5f
rhgb
quiet

15. cpupower frequency-info
analyzing CPU 0:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes

16. sysctl
kernel.numa_balancing 1
kernel.randomize_va_space 2
vm.compartment_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.extrfrag_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

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/klargepages
alloc_sleep_millisecs 60000
defrag 1
max_ptes_none 511

(Continued on next page)
Platform Notes (Continued)

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 9.0 (Plow)
   redhat-release Red Hat Enterprise Linux release 9.0 (Plow)
   system-release Red Hat Enterprise Linux release 9.0 (Plow)

20. Disk information
   FILE SPEC is set to: /spec2017-icc2023.0
   Filesystem     Type Size  Used Avail Use% Mounted on
   /dev/sda3      xfs   420G   87G  334G  21% /

21. /sys/devices/virtual/dmi/id
   Vendor:         XFUSION
   Product:        2288H V7
   Product Family: Eagle Stream
   Serial:         serial

22. dmidecode
   Additional information from dmidecode 3.3 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 M321R4GA3BB6-CQKDG 32 GB 2 rank 4800

23. BIOS
   (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       XFUSION
   BIOS Version:      2.00.55
   BIOS Date:         03/07/2023
   BIOS Revision:     0.55

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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
============================================================================================================
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 2023.0.0 Build 20221201
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xFusion
FusionServer 2288H V7 (Intel Xeon Gold 6438N)

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

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

SPECrater®2017_fp_base = 684
SPECrater®2017_fp_peak = 685

Compiler Version Notes (Continued)

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 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

C++, C, Fortran | 507.cactuBSSN_r(base, peak)
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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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 2023.0.0 Build 20221201
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Fortran, C | 521.wrf_r(base, peak) 527.cam4_r(base, peak)
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
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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

(Continued on next page)
xFusion
FusionServer 2288H V7 (Intel Xeon Gold 6438N)

SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2023 Standard Performance Evaluation Corporation

SPECrate®2017_fp_base = 684
SPECrate®2017_fp_peak = 685

CPU2017 License: 6488
Test Sponsor: xFusion
Test Date: Jul-2023
Hardware Availability: Jan-2023
Tested by: xFusion
Software Availability: Dec-2022

Base Compiler Invocation (Continued)

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.ibm_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

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

(Continued on next page)
SPEC CPU®2017 Floating Point Rate Result

xFusion
FusionServer 2288H V7 (Intel Xeon Gold 6438N)

SPECrater®2017_fp_base = 684
SPECrater®2017_fp_peak = 685

CPU2017 License: 6488
Test Sponsor: xFusion
Test Date: Jul-2023
Tested by: xFusion
Hardware Availability: Jan-2023
Software Availability: Dec-2022

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):
- 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 -xsapphirerapidxs -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 -xsapphirerapidxs -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

Peak Portability Flags

Same as Base Portability Flags
xFusion

FusionServer 2288H V7 (Intel Xeon Gold 6438N)

SPECrate®2017_fp_base = 684
SPECrate®2017_fp_peak = 685

CPU2017 License: 6488
Test Sponsor: xFusion
Tested by: xFusion

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

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: basepeak = yes

Fortran benchmarks:
503.bwaves_r: basepeak = yes
549.fotonik3d_r: basepeak = yes
554.roms_r: basepeak = yes

Benchmarks using both Fortran and C:
521.wrf_r: -w -m64 -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

527.cam4_r: basepeak = yes

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.profdata(pass 2) -xCORE-AVX2(pass 1)
-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

(Continued on next page)
Peak Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:

507.cactuBSSN_r: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml