# SPEC CPU®2017 Integer Speed Result

## xFusion

**FusionServer 2488H V7 (Intel Xeon Gold 6434H)**

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base</th>
<th>SPECspeed®2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.3</td>
<td>15.5</td>
</tr>
</tbody>
</table>

| CPU2017 License: | 6488 |
| Test Sponsor:   | xFusion |
| Tested by:      | xFusion |
| Test Date:      | Sep-2023 |
| Hardware Avail.:| Jul-2023 |
| Software Avail.:| Dec-2022 |

### Threads

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_s</td>
<td>32</td>
</tr>
<tr>
<td>gcc_s</td>
<td>32</td>
</tr>
<tr>
<td>mcf_s</td>
<td>32</td>
</tr>
<tr>
<td>omnetpp_s</td>
<td>32</td>
</tr>
<tr>
<td>xalancbmk_s</td>
<td>32</td>
</tr>
<tr>
<td>x264_s</td>
<td>32</td>
</tr>
<tr>
<td>depsjeng_s</td>
<td>32</td>
</tr>
<tr>
<td>leela_s</td>
<td>32</td>
</tr>
<tr>
<td>exchange2_s</td>
<td>32</td>
</tr>
<tr>
<td>xz_s</td>
<td>32</td>
</tr>
</tbody>
</table>

### Hardware

- **CPU Name:** Intel Xeon Gold 6434H
- **Max MHz:** 4100
- **Nominal:** 3700
- **Enabled:** 32 cores, 4 chips
- **Orderable:** 1,2,4 chips
- **Cache L1:** 32 KB I + 48 KB D on chip per core
- **L2:** 2 MB I+D on chip per core
- **L3:** 22.5 MB I+D on chip per chip
- **Other:** None
- **Memory:** 1 TB (32 x 32 GB 2Rx8 PC5-4800B-R)
- **Storage:** 1 x 960 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:** Yes
- **Firmware:** Version 01.02.00.05 Released Jul-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
Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Threads</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>600.perlbench_s</td>
<td>32</td>
<td>176</td>
<td>10.1</td>
<td>32</td>
<td>166</td>
<td>10.7</td>
<td>165</td>
<td>10.7</td>
<td>166</td>
<td>10.7</td>
<td></td>
<td></td>
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<tr>
<td>602.gcc_s</td>
<td>32</td>
<td>318</td>
<td>12.5</td>
<td>32</td>
<td>306</td>
<td>13.0</td>
<td>309</td>
<td>12.9</td>
<td>302</td>
<td>13.2</td>
<td></td>
<td></td>
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<tr>
<td>605.mcf_s</td>
<td>32</td>
<td>196</td>
<td>24.1</td>
<td>199</td>
<td>23.7</td>
<td>197</td>
<td>24.0</td>
<td>196</td>
<td>24.1</td>
<td>199</td>
<td>23.7</td>
<td>197</td>
<td>24.0</td>
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<td></td>
</tr>
<tr>
<td>623.xalancmk_s</td>
<td>32</td>
<td>46.4</td>
<td>30.6</td>
<td>46.5</td>
<td>30.5</td>
<td>46.7</td>
<td>30.4</td>
<td>32</td>
<td>46.4</td>
<td>30.6</td>
<td>46.5</td>
<td>30.5</td>
<td>46.7</td>
<td>30.4</td>
<td></td>
</tr>
<tr>
<td>625.x264_s</td>
<td>32</td>
<td>78.2</td>
<td>22.5</td>
<td>78.1</td>
<td>22.6</td>
<td>78.0</td>
<td>22.6</td>
<td>32</td>
<td>75.1</td>
<td>23.5</td>
<td>75.0</td>
<td>23.5</td>
<td>75.0</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td>631.deepsjeng_s</td>
<td>32</td>
<td>189</td>
<td>7.58</td>
<td>189</td>
<td>7.57</td>
<td>190</td>
<td>7.54</td>
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<td>7.58</td>
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<td>7.57</td>
<td>190</td>
<td>7.54</td>
<td></td>
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<tr>
<td>648.exchange2_s</td>
<td>32</td>
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<td>27.2</td>
<td>109</td>
<td>27.0</td>
<td>108</td>
<td>27.2</td>
<td>32</td>
<td>108</td>
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<td>109</td>
<td>27.0</td>
<td>108</td>
<td>27.2</td>
<td></td>
</tr>
<tr>
<td>657.xz_s</td>
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<td>229</td>
<td>27.0</td>
<td>229</td>
<td>27.0</td>
<td>229</td>
<td>27.0</td>
<td>32</td>
<td>229</td>
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<td>229</td>
<td>27.0</td>
<td>229</td>
<td>27.0</td>
<td></td>
</tr>
</tbody>
</table>

Compiler Notes

SPEC has ruled that the compiler used for this result was performing a compilation that specifically improves the performance of the 523.xalanchkmk_r / 623.xalanchmk_s benchmarks using a priori knowledge of the SPEC code and dataset to perform a transformation that has narrow applicability.

In order to encourage optimizations that have wide applicability (see rule 1.4 https://www.spec.org/cpu2017/Docs/runrules.html#rule_1.4), SPEC will no longer publish results using this optimization.

This result is left in the SPEC results database for historical reference.

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/Uniautos/cpu2017/lib/intel64:/home/Uniautos/cpu2017/je5.0.1-64"
- MALLOCONF = "retain:true"
- OMP_STACKSIZE = "192M"

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

(Continued on next page)
General Notes (Continued)

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.
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 Load Balance
Enable LP [Global] Set to Single LP

Sysinfo program /home/Uniautos/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Tue Sep 12 15:50:58 2023

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

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18. /sys/kernel/mm/transparent_hugepage
19. /sys/kernel/mm/transparent_hugepage/klhugepaged
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23. dmidecode
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xFusion
FusionServer 2488H V7 (Intel Xeon Gold 6434H)

CPU2017 License: 6488
Test Sponsor: xFusion
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SPECspeed®2017_int_base = 15.3
SPECspeed®2017_int_peak = 15.5

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

Platform Notes (Continued)

2. w
   15:50:58 up  5:34,  1 user, load average: 0.00, 0.00, 1.58
   USER TTY LOGNAME IDLE JCPU PCPU WHAT
   root pts/0 15:48  2.00s  0.77s  0.05s -bash

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) 4125328
   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) 4125328
   virtual memory (kbytes, -v) unlimited
   file locks (-x) unlimited

5. sysinfo process ancestry
   /usr/lib/systemd/systemd --switched-root --system --deserialize 30
   sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
   sshd: root [priv]
   sshd: root@pts/0
   -bash
   /bin/sh ./run_speed.sh
   runcpu --define default-platform-flags -c ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define cores=32
       --tune base,peak --all --define intspeedaffinity --define drop_caches intspeed
   runcpu --define default-platform-flags --configfile ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define
       cores=32 --tune base,peak --output_format all --define intspeedaffinity --define drop_caches --nopower
       --runmode speed --tune base:peak --size refspeed intspeed --nopreenv --note-preenv --logfile
       $SPEC/tmp/CPU2017.096/templogs/preenv.intspeed.096.0.log --lognum 096.0 --from_runcpu 2
   specperl $SPEC/bin/sysinfo
   $SPEC = /home/Uniautos/cpu2017

6. /proc/cpuinfo
   model name : Intel(R) Xeon(R) Gold 6434H
   vendor_id : GenuineIntel
   cpu family : 6
   model : 143
   stepping : 8
   microcode : 0x2b0001b0
   bugs : spectre_v1 spectre_v2 spec_store_bypass swaps
   cpu cores : 8
   siblings : 8
   4 physical ids (chips)
   32 processors (hardware threads)
   physical id 0: core ids 0-7

(Continued on next page)
Platform Notes (Continued)

physical id 1: core ids 0-7
physical id 2: core ids 0-7
physical id 3: core ids 0-7
physical id 0: apicids 0,2,4,6,8,10,12,14
physical id 1: apicids 128,130,132,134,136,138,140,142
physical id 2: apicids 256,258,260,262,264,266,268,270
physical id 3: apicids 384,386,388,390,392,394,396,398

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

7. lscpu

From lscpu from util-linux 2.37.4:
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Address sizes: 46 bits physical, 57 bits virtual
Byte Order: Little Endian
CPU(s): 32
On-line CPU(s) list: 0-31
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel(R) Corporation
Model name: Intel(R) Xeon(R) Gold 6434H
BIOS Model name: Intel(R) Xeon(R) Gold 6434H
CPU family: 6
Model: 143
Thread(s) per core: 1
Core(s) per socket: 8
Socket(s): 4
Stepping: 8
Frequency boost: enabled
CPU max MHz: 3701.000
CPU min MHz: 800.000
BogoMIPS: 7400.00
Flags:
  fpu vme de pae mce cx8 apic sep mtrr pse msr pae mca cmov pat pse36
  clflush dts acpi mmx fxsr sse sse2 as ht tm pbe syscall nx pdpe1gb rdtscp
  lm constant_tsc 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 sdbb fma cx16 xtrm pdc icid dca sse4_1
  sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand
  lahf_lm abm 3nowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3
  invpcid_single intel_ppin cdpu_12 sbbd mba ibrs ibtt ibrs_enabled
  tpr_shadow vmni fxearpa ept vpid ept_ad fsgsb shtomb tsc_adjust bni1 avx2
  smep bmi2 erms invpcid cqm rdt_a smap
  axv512_iqma clflushopt clwb intel_pt avx512cd sha ni avx512bw avx512vl
  avx512vpt opt xsaveopt xsavec xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc
  cqm_mbbotal cqm_mbbotal split_lock_detect avx_vnni avx512_shape dtherm
  ida arat pln pts avx512f vmbi umip pku ospk waitpkg avx512 vmbi gfxi vaes
  vpcmlmul dq avx512_vnni avx512_vnni avx512_bitalg tme avx512_vppocntdq
  127 rdpid bus_lock_detect cldemote movdir i movdir i486 enqcmd mar cleard serialize
  tsx itr map config arch_bbr avx512_fpu16 amx_tile flush llf arch_capabilities

Virtualization: VT-x
L1d cache: 1.5 MiB (32 instances)
L1i cache: 1 MiB (32 instances)
L2 cache: 64 MiB (32 instances)
L3 cache: 90 MiB (4 instances)
NUMA node(s): 4
NUMA node0 CPU(s): 0-7
NUMA node1 CPU(s): 8-15
NUMA node2 CPU(s): 16-23

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<td>15.5</td>
</tr>
</tbody>
</table>

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

Test Date: Sep-2023
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### Platform Notes (Continued)

- **NUMA node3 CPU(s):** 24-31
- **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/swapgs 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:**

<table>
<thead>
<tr>
<th>NAME</th>
<th>ONE-SIZE</th>
<th>ALL-SIZE</th>
<th>WAYS</th>
<th>TYPE</th>
<th>LEVEL</th>
<th>SETS</th>
<th>PHY-LINE</th>
<th>COHERENCY-SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1d</td>
<td>48K</td>
<td>1.5M</td>
<td>12</td>
<td>Data</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L1i</td>
<td>32K</td>
<td>1M</td>
<td>8</td>
<td>Instruction</td>
<td>1</td>
<td>64</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L2</td>
<td>2M</td>
<td>64M</td>
<td>16</td>
<td>Unified</td>
<td>2</td>
<td>2048</td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>L3</td>
<td>22.5M</td>
<td>90M</td>
<td>15</td>
<td>Unified</td>
<td>3</td>
<td>24576</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.

<table>
<thead>
<tr>
<th>available: 4 nodes (0-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>node 0 cpus: 0-7</td>
</tr>
<tr>
<td>node 0 size: 257278 MB</td>
</tr>
<tr>
<td>node 0 free: 256441 MB</td>
</tr>
<tr>
<td>node 1 cpus: 8-15</td>
</tr>
<tr>
<td>node 1 size: 258009 MB</td>
</tr>
<tr>
<td>node 1 free: 256913 MB</td>
</tr>
<tr>
<td>node 2 cpus: 16-23</td>
</tr>
<tr>
<td>node 2 size: 258046 MB</td>
</tr>
<tr>
<td>node 2 free: 255396 MB</td>
</tr>
<tr>
<td>node 3 cpus: 24-31</td>
</tr>
<tr>
<td>node 3 size: 258035 MB</td>
</tr>
<tr>
<td>node 3 free: 257359 MB</td>
</tr>
<tr>
<td>node distances:</td>
</tr>
<tr>
<td>0: 10 21 21 21</td>
</tr>
<tr>
<td>1: 21 10 21 21</td>
</tr>
<tr>
<td>2: 21 21 10 21</td>
</tr>
<tr>
<td>3: 21 21 21 10</td>
</tr>
</tbody>
</table>

---

**9. /proc/meminfo**

| MemTotal: 1056122124 kB |

---

**10. who -r**

| run-level 3 Sep 12 10:17 |

---

**11. Systemd service manager version:** systemd 250 (250-6.el9_0)

<table>
<thead>
<tr>
<th>Default Target</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>multi-user</td>
<td>degraded</td>
</tr>
</tbody>
</table>

---

**12. Failed units, from systemctl list-units --state=failed**

<table>
<thead>
<tr>
<th>UNIT</th>
<th>LOAD</th>
<th>ACTIVE SUB</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>dnf-makecache.service loaded failed failed dnf makecache</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sep5.service loaded failed failed systemd script to load sep5 driver at boot time</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Continued on next page)
Platform Notes (Continued)

13. Services, from systemctl list-unit-files

<table>
<thead>
<tr>
<th>STATE</th>
<th>UNIT FILES</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>NetworkManager NetworkManager-dispatcher NetworkManager-wait-online audith chronyd crond dbus-broker firewalld getty@ irqbalance kdump mdmmonitor microcode nis-domainname rhapsertd syslog selinux-autorelabel-mark sep5 sshd sssd systemd-network-generator tuned udisks2</td>
</tr>
<tr>
<td>enabled-runtime</td>
<td>systemd-remount-fs</td>
</tr>
<tr>
<td>disabled</td>
<td>chrony-wait console-getty cpupower debug-shell kvm_stat man-db-restart-cache-update ndtables rdisc rshm-facts rpmdb-rebuild serial-getty@ ssd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysxet ssd-autofs ssd-kcm ssd-nss ssd-pac sssd-pam sssd-ssh sssd-sudo</td>
</tr>
<tr>
<td>indirect</td>
<td>systemctl list-unit-files</td>
</tr>
</tbody>
</table>

14. Linux kernel boot-time arguments, from /proc/cmdline

BOOT_IMAGE=(hd0,gpt2)/vmlinuz-5.14.0-70.13.1.el9_0.x86_64
root=UUID=058bfdf1-c62b-4fad-8d41-5c40aa179007
ro
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M
resume=UUID=b47f1685-a5fa-4d39-b2d7-e3f6e95ad499
nohz_full=1-72

15. cgroup frequency-info

analyzer CPU 0:
current policy: frequency should be within 800 MHz and 3.70 GHz.
The governor "performance" may decide which speed to use within this range.
boost state support:
  Supported: yes
  Active: yes

16. tuned-adm active

Current active profile: throughput-performance

17. 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.extr frag 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

18. /sys/kernel/mm/transparent_hugepage

defrag always defer defer+madvis free [madive] never

(Continued on next page)
### Platform Notes (Continued)

enabled [always] madvise never
hpage_pmd_size 2097152
shmem_enabled always within_size advise [never] deny force

```
19. /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
```

```
20. 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)
```

```
21. Disk information
   SPEC is set to: /home/Uniautos/cpu2017
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda5      xfs   820G   48G  772G   6% /home
```

```
22. /sys/devices/virtual/dmi/id
   Vendor:         XFUSION
   Product:        2488H V7
   Product Family: EagleStream
```

```
23. 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:
     32x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800
```

```
24. BIOS
   (This section combines info from /sys/devices and dmidecode.)
   BIOS Vendor:       XFUSION
   BIOS Version:      01.02.00.05
   BIOS Date:         07/13/2023
```

### Compiler Version Notes

```
C | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
  | 657.xz_s(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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(Continued on next page)
Compiler Version Notes (Continued)

============================================================================================================
C++     | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak) 641.leela_s(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 | 648.exchange2_s(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

Base Portability Flags

600.perlbench_s: -DSPEC_LP64 -DSPEC_LINUX_X64
602.gcc_s: -DSPEC_LP64
605.mcf_s: -DSPEC_LP64
620.omnetpp_s: -DSPEC_LP64
623.xalancbmk_s: -DSPEC_LP64 -DSPEC_LINUX
625.x264_s: -DSPEC_LP64
631.deepsjeng_s: -DSPEC_LP64
641.leela_s: -DSPEC_LP64
648.exchange2_s: -DSPEC_LP64
657.xz_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-m64 -std=c11 -Wl,-z,muldef -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fopenmp

(Continued on next page)
SPEC CPU®2017 Integer Speed Result

xFusion

FusionServer 2488H V7 (Intel Xeon Gold 6434H)

<table>
<thead>
<tr>
<th>SPECspeed®2017_int_base = 15.3</th>
<th>SPECspeed®2017_int_peak = 15.5</th>
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<tbody>
<tr>
<td>CPU2017 License: 6488</td>
<td>Test Date: Sep-2023</td>
</tr>
<tr>
<td>Test Sponsor: xFusion</td>
<td>Hardware Availability: Jul-2023</td>
</tr>
<tr>
<td>Tested by: xFusion</td>
<td>Software Availability: Dec-2022</td>
</tr>
</tbody>
</table>

Base Optimization Flags (Continued)

C benchmarks (continued):
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

C++ benchmarks:
-m64 -std=c++14 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:
-m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Peak Compiler Invocation

C benchmarks:
icx

C++ benchmarks:
icpx

Fortran benchmarks:
ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:
600.perlbench_s: -m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-fiopenmp -DSPEC_OPENMP -fno-strict-overflow
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

(Continued on next page)
**SPEC CPU®2017 Integer Speed Result**

xFusion

FusionServer 2488H V7 (Intel Xeon Gold 6434H)

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</table>

**CPU2017 License:** 6488

**Test Sponsor:** xFusion

**Test Date:** Sep-2023

**Hardware Availability:** Jul-2023

**Tested by:** xFusion

**Software Availability:** Dec-2022

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### Peak Optimization Flags (Continued)

602.gcc_s: `m64 -std=c11 -Wl,-z,muldefs -fprofile-generate(pass 1) -fprofile-use=default.profdata(pass 2) -xCORE-AVX2(pass 1) -flto -Ofast(pass 1) -xCORE-AVX512 -O3 -ffast-math -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fopenmp -DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

605.mcf_s: `basepeak = yes`

625.x264_s: `m64 -std=c11 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fopenmp -DSPEC_OPENMP -fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc`

657.xz_s: `basepeak = yes`

**C++ benchmarks:**

620.omnetpp_s: `basepeak = yes`

623.xalancbmk_s: `basepeak = yes`

631.deepsjeng_s: `basepeak = yes`

641.leela_s: `basepeak = yes`

**Fortran benchmarks:**

648.exchange2_s: `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](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](http://www.spec.org/cpu2017/flags/Intel-ic2023-official-linux64.xml)

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