SPEC CPU®2017 Integer Speed Result

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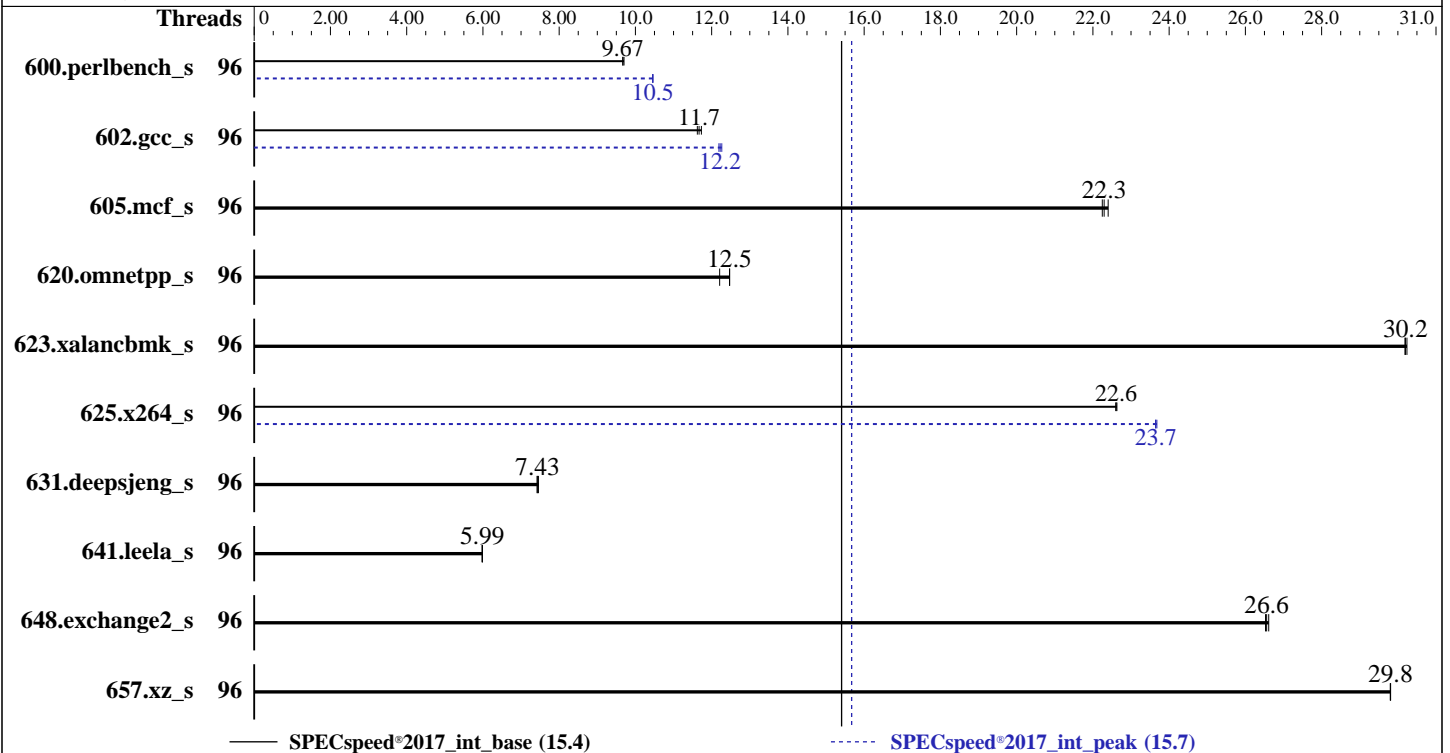## xFusion

FusionServer 5885H V7 (Intel Xeon Gold 6418H)

$SPECspeed®2017\_int\_base = 15.4$

$SPECspeed®2017\_int\_peak = 15.7$

CPU2017 License: 6488

Test Sponsor: xFusion

Tested by: xFusion

Test Date: Aug-2023

Hardware Availability: May-2023

Software Availability: Dec-2022

Benchmark	Threads	base	peak
600.perlbench_s	96	9.67	10.5
602.gcc_s	96	11.7	12.2
605.mcf_s	96	22.3	
620.omnetpp_s	96	12.5	
623.xalancbmk_s	96	30.2	
625.x264_s	96	22.6	23.7
631.deepsjeng_s	96	7.43	
641.leela_s	96	5.99	
648.exchange2_s	96	26.6	
657.xz_s	96	29.8	

SPECspeed®2017_int_base (15.4)   SPECspeed®2017_int_peak (15.7)

Hardware

CPU Name: Intel Xeon Gold 6418H
Max MHz: 4000
Nominal: 2100
Enabled: 96 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: 60 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

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Results Table

Benchmark	Base							Peak						
	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Threads	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
600.perlbench_s	96	184	9.67	**184**	**9.67**	183	9.70	96	170	10.5	**170**	**10.5**	170	10.5
602.gcc_s	96	339	11.7	343	11.6	**341**	**11.7**	96	**326**	**12.2**	325	12.3	327	12.2
605.mcf_s	96	212	22.2	211	22.4	**212**	**22.3**	96	212	22.2	211	22.4	**212**	**22.3**
620.omnetpp_s	96	131	12.5	134	12.2	**131**	**12.5**	96	131	12.5	134	12.2	**131**	**12.5**
623.xalancbmk_s	96	**46.9**	**30.2**	46.9	30.2	46.9	30.2	96	**46.9**	**30.2**	46.9	30.2	46.9	30.2
625.x264_s	96	**78.0**	**22.6**	78.1	22.6	77.9	22.6	96	**74.6**	**23.7**	74.5	23.7	74.6	23.6
631.deepsjeng_s	96	193	7.42	**193**	**7.43**	192	7.46	96	193	7.42	**193**	**7.43**	192	7.46
641.leela_s	96	**285**	**5.99**	285	5.98	285	5.99	96	**285**	**5.99**	285	5.98	285	5.99
648.exchange2_s	96	110	26.6	111	26.5	**111**	**26.6**	96	110	26.6	111	26.5	**111**	**26.6**
657.xz_s	96	**207**	**29.8**	207	29.8	207	29.8	96	**207**	**29.8**	207	29.8	207	29.8
SPECspeed®2017_int_base =		**15.4**												
SPECspeed®2017_int_peak =		**15.7**												

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

Compiler Notes

```
SPEC has ruled that the compiler used for this result was performing a compilation
that specifically improves the performance of the 523.xalancbmk_r / 623.xalancbmk_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"
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 Red Hat Enterprise Linux 8.4
 Transparent Huge Pages enabled by default
 Prior to runcpu invocation
```

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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
sources available from jemalloc.net or https://github.com/jemalloc/jemalloc/releases
```

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 Fri Aug 25 11:49:30 2023

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. who -r
11. Systemd service manager version: systemd 250 (250-6.el9_0)
12. Failed units, from systemctl 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. tuned-adm active
17. sysctl
18. /sys/kernel/mm/transparent_hugepage
19. /sys/kernel/mm/transparent_hugepage/khugepaged
20. OS release
21. Disk information
22. /sys/devices/virtual/dmi/id
23. dmidecode
24. 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 x86_64 GNU/Linux

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

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Platform Notes (Continued)

```
 2. w
    11:49:30 up 13 min,  1 user,  load average: 0.05, 0.18, 0.29
   USER     TTY          LOGIN@   IDLE   JCPU   PCPU WHAT
   root     pts/0        11:37   10.00s  0.79s  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) 4125275
   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) 4125275
   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=96
    --tune base,peak -o all --define intspeedaffinity --define drop_caches intspeed
  runcpu --define default-platform-flags --configfile ic2023.0-lin-sapphirerapids-speed-20221201.cfg --define
    cores=96 --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/CPU2017.073/templogs/preenv.intspeed.073.0.log --lognum 073.0 --from_runcpu 2
  specperl $SPEC/bin/sysinfo
 $SPEC = /home/Uniautos/cpu2017

  -------------------------------------------------------------
 6. /proc/cpuinfo
    model name     : Intel(R) Xeon(R) Gold 6418H
    vendor_id      : GenuineIntel
    cpu family     : 6
    model          : 143
    stepping       : 8
    microcode      : 0x2b0001b0
    bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs
    cpu cores      : 24
    siblings       : 24
    4 physical ids (chips)
    96 processors (hardware threads)
    physical id 0: core ids 0-23
```

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Platform Notes (Continued)

```
    physical id 1: core ids 0-23
    physical id 2: core ids 0-23
    physical id 3: core ids 0-23
    physical id 0: apicids 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46
    physical id 1: apicids
    128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158,160,162,164,166,168,170,172,174
    physical id 2: apicids
    256,258,260,262,264,266,268,270,272,274,276,278,280,282,284,286,288,290,292,294,296,298,300,302
    physical id 3: apicids
    384,386,388,390,392,394,396,398,400,402,404,406,408,410,412,414,416,418,420,422,424,426,428,430
  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):                        96
  On-line CPU(s) list:           0-95
  Vendor ID:                     GenuineIntel
  BIOS Vendor ID:                Intel(R) Corporation
  Model name:                    Intel(R) Xeon(R) Gold 6418H
  BIOS Model name:               Intel(R) Xeon(R) Gold 6418H
  CPU family:                    6
  Model:                         143
  Thread(s) per core:            1
  Core(s) per socket:            24
  Socket(s):                     4
  Stepping:                      8
  Frequency boost:               enabled
  CPU max MHz:                   2101.0000
  CPU min MHz:                   800.0000
  BogoMIPS:                      4200.00
  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
                                 invpcid_single intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced
                                 tpr_shadow vnmi 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 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 avx512_fp16 amx_tile flush_l1d arch_capabilities
  Virtualization:                VT-x
  L1d cache:                     4.5 MiB (96 instances)
  L1i cache:                     3 MiB (96 instances)
  L2 cache:                      192 MiB (96 instances)
  L3 cache:                      240 MiB (4 instances)
  NUMA node(s):                  4
```

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xFusion

$SPECspeed®2017\_int\_base = 15.4$

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Platform Notes (Continued)

```
  NUMA node0 CPU(s):            0-23
  NUMA node1 CPU(s):            24-47
  NUMA node2 CPU(s):            48-71
  NUMA node3 CPU(s):            72-95
  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:
      NAME ONE-SIZE ALL-SIZE WAYS TYPE        LEVEL  SETS PHY-LINE COHERENCY-SIZE
      L1d     48K     4.5M   12 Data           1    64      1         64
      L1i     32K      3M    8 Instruction     1    64      1         64
      L2       2M     192M   16 Unified        2  2048      1         64
      L3      60M     240M   15 Unified        3 65536      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: 0-23
  node 0 size: 257275 MB
  node 0 free: 256019 MB
  node 1 cpus: 24-47
  node 1 size: 258042 MB
  node 1 free: 257101 MB
  node 2 cpus: 48-71
  node 2 size: 258006 MB
  node 2 free: 257519 MB
  node 3 cpus: 72-95
  node 3 size: 258031 MB
  node 3 free: 257537 MB
  node distances:
  node   0   1   2   3
    0:  10  21  21  21
    1:  21  10  21  21
    2:  21  21  10  21
    3:  21  21  21  10

  -------------------------------------------------------------
9. /proc/meminfo
   MemTotal:       1056108528 kB

  -------------------------------------------------------------
10. who -r
   run-level 3 Aug 25 11:36

  -------------------------------------------------------------
11. Systemd service manager version: systemd 250 (250-6.el9_0)
   Default Target  Status
   multi-user      degraded

  -------------------------------------------------------------
12. Failed units, from systemctl list-units --state=failed
     UNIT        LOAD   ACTIVE SUB    DESCRIPTION
```

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Platform Notes (Continued)

```
   * sep5.service loaded failed failed systemd 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 auditd chronyd crond
                      dbus-broker firewalld getty@ irqbalance kdump mdmonitor microcode nis-domainname rhsmcertd
                      rsyslog selinux-autorelabel-mark sep5 sshd sssd systemd-network-generator tuned udisks2
    enabled-runtime   systemd-remount-fs
    disabled          chrony-wait console-getty cpupower debug-shell kvm_stat man-db-restart-cache-update
                      nftables rdisc rhsm rhsm-facts rpmdb-rebuild serial-getty@ sshd-keygen@
                      systemd-boot-check-no-failures systemd-pstore systemd-sysext
    indirect          sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo


  --------------------------------------------------------------
  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. cpupower frequency-info
    analyzing CPU 0:
      current policy: frequency should be within 800 MHz and 2.10 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.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


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

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Platform Notes (Continued)

```
18. /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

   ----------------------------------------------------------------
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  773G   6% /home

   ----------------------------------------------------------------
22. /sys/devices/virtual/dmi/id
     Vendor:         XFUSION
     Product:        5885H 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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Compiler Version Notes (Continued)

```
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------


==============================================================================================
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
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------


==============================================================================================
Fortran | 648.exchange2_s(base, peak)
--------------------------------------------------------------------------------------------
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.0.0 Build 20221201
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.
--------------------------------------------------------------------------------------------
```

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`

SPEC CPU®2017 Integer Speed Result

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xFusion

FusionServer 5885H V7 (Intel Xeon Gold 6418H)

SPECspeed®2017_int_base = 15.4

SPECspeed®2017_int_peak = 15.7

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

Test Date: Aug-2023
Hardware Availability: May-2023
Software Availability: Dec-2022

Base Optimization Flags

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

(Continued on next page)

Standard Performance Evaluation Corporation (info@spec.org)

https://www.spec.org/

xFusion

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SPECspeed®2017_int_base = 15.4

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CPU2017 License: 6488		**Test Date:**	Aug-2023
Test Sponsor: xFusion		**Hardware Availability:** May-2023
Tested by: xFusion		**Software Availability:** Dec-2022

Peak Optimization Flags (Continued)

600.perlbench_s (continued):
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

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
-fiopenmp -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 -fiopenmp -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/xFusion-Platform-Settings-SPR-V1.1-revC.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/xFusion-Platform-Settings-SPR-V1.1-revC.xml

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xFusion

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CPU2017 License: 6488
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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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