



# SPEC CPU®2017 Integer Rate Result

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## xFusion

SPECrate®2017\_int\_base = 896

FusionServer 2488H V7 (Intel Xeon Gold 6418H)

SPECrate®2017\_int\_peak = 919

CPU2017 License: 6488

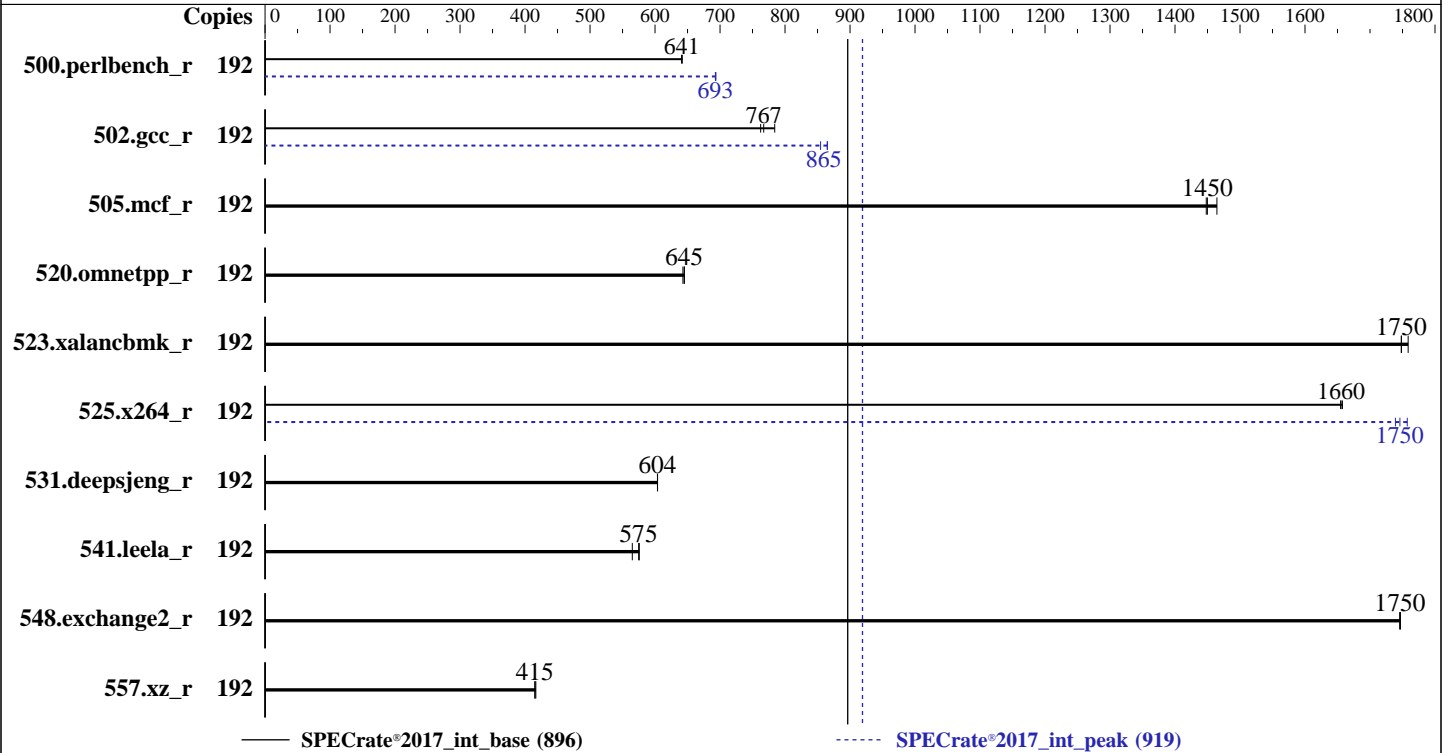
Test Sponsor: xFusion

Tested by: xFusion

Test Date: Aug-2023

Hardware Availability: Jul-2023

Software Availability: Dec-2022



### Hardware

CPU Name: Intel Xeon Gold 6418H  
 Max MHz: 4000  
 Nominal: 2100  
 Enabled: 96 cores, 4 chips, 2 threads/core  
 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: No  
 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: 32/64-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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
500.perlbench_r	192	477	641	<b><u>477</u></b>	<b><u>641</u></b>	476	642	192	<b><u>441</u></b>	<b><u>693</u></b>	441	693	441	694
502.gcc_r	192	<b><u>354</u></b>	<b><u>767</u></b>	347	784	357	762	192	<b><u>314</u></b>	<b><u>865</u></b>	318	855	314	865
505.mcf_r	192	214	1450	<b><u>214</u></b>	<b><u>1450</u></b>	212	1460	192	214	1450	<b><u>214</u></b>	<b><u>1450</u></b>	212	1460
520.omnetpp_r	192	391	645	392	643	<b><u>391</u></b>	<b><u>645</u></b>	192	391	645	392	643	<b><u>391</u></b>	<b><u>645</u></b>
523.xalancbmk_r	192	115	1760	<b><u>116</u></b>	<b><u>1750</u></b>	116	1750	192	115	1760	<b><u>116</u></b>	<b><u>1750</u></b>	116	1750
525.x264_r	192	203	1650	<b><u>203</u></b>	<b><u>1660</u></b>	203	1660	192	191	1760	193	1740	<b><u>193</u></b>	<b><u>1750</u></b>
531.deepsjeng_r	192	364	604	364	604	<b><u>364</u></b>	<b><u>604</u></b>	192	364	604	364	604	<b><u>364</u></b>	<b><u>604</u></b>
541.leela_r	192	552	576	563	565	<b><u>553</u></b>	<b><u>575</u></b>	192	552	576	563	565	<b><u>553</u></b>	<b><u>575</u></b>
548.exchange2_r	192	288	1750	288	1750	<b><u>288</u></b>	<b><u>1750</u></b>	192	288	1750	288	1750	<b><u>288</u></b>	<b><u>1750</u></b>
557.xz_r	192	498	417	<b><u>499</u></b>	<b><u>415</u></b>	500	415	192	498	417	<b><u>499</u></b>	<b><u>415</u></b>	500	415

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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](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.

## 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 =

"/home/Uniautos/cpu2017/lib/intel64:/home/Uniautos/cpu2017/lib/ia32:/home/Uniautos/cpu2017/je5.0.1-32"

MALLOC\_CONF = "retain:true"



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## 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.:  
numactl --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.  
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 Performance  
SNC Set to Enable SNC2 (2-clusters)  
  
Sysinfo program /home/Uniautos/cpu2017/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Tue Aug 22 11:13:22 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
- 

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### Platform Notes (Continued)

-----  
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

-----  
2. `w`  
11:13:22 up 4 min, 1 user, load average: 0.45, 2.55, 1.48  
USER TTY LOGIN@ IDLE JCPU PCPU WHAT  
root pts/0 11:11 9.00s 1.10s 0.04s -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) 4125156  
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) 4125156  
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\_rate.sh  
runcpu --define default-platform-flags --copies 192 -c ic2023.0-lin-sapphirerapids-rate-20221201.cfg  
--define smt-on --define cores=96 --define physicalfirst --define invoke\_with\_interleave --define  
drop\_caches --tune base,peak -o all intrate  
runcpu --define default-platform-flags --copies 192 --configfile  
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=96 --define physicalfirst  
--define invoke\_with\_interleave --define drop\_caches --tune base,peak --output\_format all --nopower  
--runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile  
\$SPEC/tmp/CPU2017.065/emplogs/preenv.intrate.065.0.log --lognum 065.0 --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

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### Platform Notes (Continued)

```
stepping      : 8
microcode     : 0x2b0001b0
bugs          : spectre_v1 spectre_v2 spec_store_bypass swapsg
cpu cores     : 24
siblings      : 48
4 physical ids (chips)
192 processors (hardware threads)
physical id 0: core ids 0-23
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 0-47
physical id 1: apicids 128-175
physical id 2: apicids 256-303
physical id 3: apicids 384-431
```

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):                 192
On-line CPU(s) list:   0-191
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:    2
Core(s) per socket:    24
Socket(s):              4
Stepping:               8
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 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_lld arch_capabilities
Virtualization:        VT-x
L1d cache:             4.5 MiB (96 instances)
L1i cache:             3 MiB (96 instances)
L2 cache:              192 MiB (96 instances)
```

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### Platform Notes (Continued)

```

L3 cache:                240 MiB (4 instances)
NUMA node(s):            8
NUMA node0 CPU(s):      0-11,96-107
NUMA node1 CPU(s):      12-23,108-119
NUMA node2 CPU(s):      24-35,120-131
NUMA node3 CPU(s):      36-47,132-143
NUMA node4 CPU(s):      48-59,144-155
NUMA node5 CPU(s):      60-71,156-167
NUMA node6 CPU(s):      72-83,168-179
NUMA node7 CPU(s):      84-95,180-191
Vulnerability Itlb multihit: Not affected
Vulnerability Lltf:      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/swaps 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: 8 nodes (0-7)
node 0 cpus: 0-11,96-107
node 0 size: 128251 MB
node 0 free: 126944 MB
node 1 cpus: 12-23,108-119
node 1 size: 128982 MB
node 1 free: 127901 MB
node 2 cpus: 24-35,120-131
node 2 size: 129018 MB
node 2 free: 128573 MB
node 3 cpus: 36-47,132-143
node 3 size: 129018 MB
node 3 free: 128605 MB
node 4 cpus: 48-59,144-155
node 4 size: 129018 MB
node 4 free: 128610 MB
node 5 cpus: 60-71,156-167
node 5 size: 129018 MB
node 5 free: 128616 MB
node 6 cpus: 72-83,168-179
node 6 size: 129018 MB
node 6 free: 128606 MB
node 7 cpus: 84-95,180-191
node 7 size: 128998 MB
node 7 free: 128595 MB
node distances:
node  0  1  2  3  4  5  6  7
0:  10  12  21  21  21  21  21  21
1:  12  10  21  21  21  21  21  21
2:  21  21  10  12  21  21  21  21

```

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### Platform Notes (Continued)

```

3: 21 21 12 10 21 21 21 21
4: 21 21 21 21 10 12 21 21
5: 21 21 21 21 12 10 21 21
6: 21 21 21 21 21 21 10 12
7: 21 21 21 21 21 21 12 10

```

```

-----
9. /proc/meminfo
   MemTotal:      1056078232 kB
-----

```

```

-----
10. who -r
    run-level 3 Aug 22 11:09
-----

```

```

-----
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
* 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@ irgbalance 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 rpmd-b-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=058bfd1-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:
    Unable to determine current policy
    boost state support:
    Supported: yes
    Active: yes
-----

```

```

-----
16. tuned-adm active
    Current active profile: throughput-performance
-----

```

```

-----
17. sysctl
    kernel.numa_balancing      1
-----

```

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### Platform Notes (Continued)

```

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

```

```

-----
18. /sys/kernel/mm/transparent_hugepage
defrag          always defer defer+madvice [madvice] never
enabled        [always] madvice 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:         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

```

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### Platform Notes (Continued)

"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 | 502.gcc\_r(peak)

-----  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201  
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=====  
C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak) 525.x264\_r(base, peak)  
| 557.xz\_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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=====  
C | 502.gcc\_r(peak)

-----  
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=====  
C | 500.perlbench\_r(base, peak) 502.gcc\_r(base) 505.mcf\_r(base, peak) 525.x264\_r(base, peak)  
| 557.xz\_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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=====  
C++ | 520.omnetpp\_r(base, peak) 523.xalancbmk\_r(base, peak) 531.deepsjeng\_r(base, peak)  
| 541.leela\_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 | 548.exchange2\_r(base, peak)

-----  
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# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

**xFusion**

SPECrate®2017\_int\_base = 896

FusionServer 2488H V7 (Intel Xeon Gold 6418H)

SPECrate®2017\_int\_peak = 919

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

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

## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

## Base Portability Flags

```
500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
```

## Base Optimization Flags

C benchmarks:

```
-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

C++ benchmarks:

```
-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```



# SPEC CPU®2017 Integer Rate Result

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

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

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

## Peak Portability Flags

```
500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
```

## Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-fno-strict-overflow
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmallocc

502.gcc_r: -m32
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc
```

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# SPEC CPU®2017 Integer Rate Result

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## xFusion

SPECrate®2017\_int\_base = 896

FusionServer 2488H V7 (Intel Xeon Gold 6418H)

SPECrate®2017\_int\_peak = 919

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

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

## Peak Optimization Flags (Continued)

505.mcf\_r: basepeak = yes

```
525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/usr/local/intel/compiler/2023.0.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

557.xz\_r: basepeak = yes

C++ benchmarks:

520.omnetpp\_r: basepeak = yes

523.xalancbmk\_r: basepeak = yes

531.deepsjeng\_r: basepeak = yes

541.leela\_r: basepeak = yes

Fortran benchmarks:

548.exchange2\_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>

<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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Tested with SPEC CPU®2017 v1.1.9 on 2023-08-21 23:13:21-0400.

Report generated on 2024-01-29 18:07:33 by CPU2017 PDF formatter v6716.

Originally published on 2023-09-13.