



# SPEC CPU®2017 Integer Rate Result

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## xFusion

SPECrate®2017\_int\_base = 272

FusionServer 1288H V7 (Intel Xeon Gold 6421N)

SPECrate®2017\_int\_peak = 281

CPU2017 License: 6488

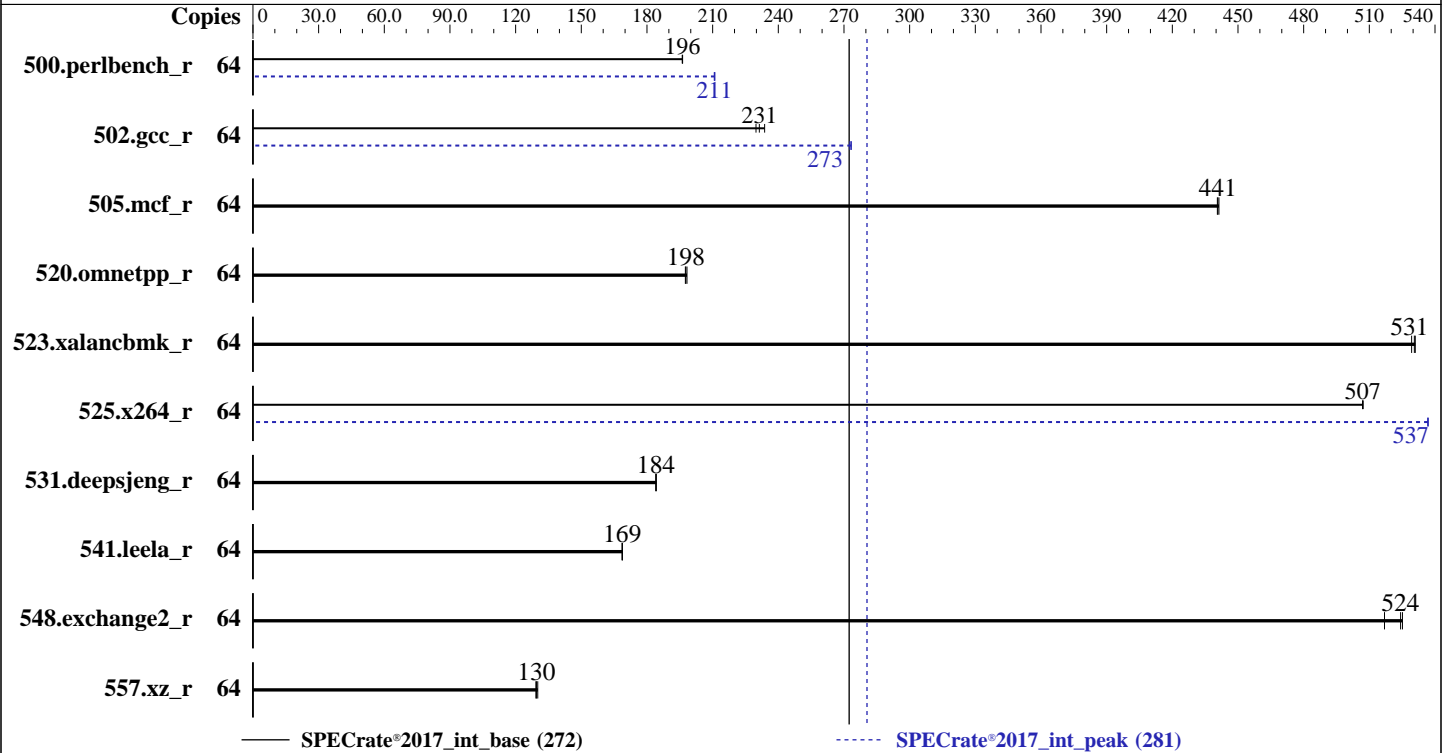
Test Sponsor: xFusion

Tested by: xFusion

Test Date: Jul-2023

Hardware Availability: Jan-2023

Software Availability: Dec-2022



### Hardware

CPU Name: Intel Xeon Gold 6421N  
 Max MHz: 3600  
 Nominal: 1800  
 Enabled: 32 cores, 1 chip, 2 threads/core  
 Orderable: 1 chip  
 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: 256 GB (8 x 32 GB 2Rx8 PC5-4800B-R, running at 4400)  
 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 2.00.55 Released Mar-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	64	519	196	520	196	<b>519</b>	<b>196</b>	64	<b>483</b>	<b>211</b>	483	211	483	211
502.gcc_r	64	394	230	<b>392</b>	<b>231</b>	388	234	64	332	273	<b>332</b>	<b>273</b>	332	273
505.mcf_r	64	<b>235</b>	<b>441</b>	234	441	235	441	64	<b>235</b>	<b>441</b>	234	441	235	441
520.omnetpp_r	64	423	198	425	198	<b>425</b>	<b>198</b>	64	423	198	425	198	<b>425</b>	<b>198</b>
523.xalancbmk_r	64	128	529	<b>127</b>	<b>531</b>	127	531	64	128	529	<b>127</b>	<b>531</b>	127	531
525.x264_r	64	<b>221</b>	<b>507</b>	221	507	221	507	64	209	537	<b>209</b>	<b>537</b>	209	537
531.deepsjeng_r	64	398	184	<b>398</b>	<b>184</b>	399	184	64	398	184	<b>398</b>	<b>184</b>	399	184
541.leela_r	64	628	169	<b>628</b>	<b>169</b>	628	169	64	628	169	<b>628</b>	<b>169</b>	628	169
548.exchange2_r	64	319	525	324	517	<b>320</b>	<b>524</b>	64	319	525	324	517	<b>320</b>	<b>524</b>
557.xz_r	64	531	130	<b>534</b>	<b>130</b>	535	129	64	531	130	<b>534</b>	<b>130</b>	535	129

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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/spec2017-ic2023/lib/intel64:/home/spec2017-ic2023/lib/ia32:/home/spec2017-ic2023/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/spec2017-ic2023/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Wed Jul 26 06:23:35 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
06:23:35 up 1 min,  1 user,  load average: 0.30, 0.18, 0.07
USER      TTY      LOGIN@   IDLE   JCPU   PCPU   WHAT
root      tty1    06:22    1:03   1.37s  0.07s  -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) 1028036
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) 1028036
virtual memory              (kbytes, -v) unlimited
file locks                  (-x) unlimited

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 27
login -- root
-bash
-bash
runcpu --define default-platform-flags --copies 64 -c ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define
smt-on --define cores=32 --define physicalfirst --define invoke_with_interleave --define drop_caches
--tune base,peak --iterations 3 -o all intrate
runcpu --define default-platform-flags --copies 64 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=32 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --iterations 3 --output_format all
--nopower --runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.158/templogs/preenv.intrate.158.0.log --lognum 158.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/spec2017-ic2023

-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Gold 6421N
vendor_id      : GenuineIntel
cpu family     : 6
model          : 143
stepping      : 7
microcode     : 0x2b000111

```

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### Platform Notes (Continued)

bugs : spectre\_v1 spectre\_v2 spec\_store\_bypass swapgs  
cpu cores : 32  
siblings : 64  
1 physical ids (chips)  
64 processors (hardware threads)  
physical id 0: core ids 0-31  
physical id 0: apicids 0-63

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): 64
On-line CPU(s) list: 0-63
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel(R) Corporation
Model name: Intel(R) Xeon(R) Gold 6421N
BIOS Model name: Intel(R) Xeon(R) Gold 6421N
CPU family: 6
Model: 143
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s): 1
Stepping: 7
BogoMIPS: 3600.00
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 aperfperf 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 avx512v1 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
flush_lld 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: 60 MiB (1 instance)
NUMA node(s): 2
NUMA node0 CPU(s): 0-15,32-47
NUMA node1 CPU(s): 16-31,48-63
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
```

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### Platform Notes (Continued)

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	1.5M	12	Data	1	64	1	64
L1i	32K	1M	8	Instruction	1	64	1	64
L2	2M	64M	16	Unified	2	2048	1	64
L3	60M	60M	15	Unified	3	65536	1	64

8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.

```
available: 2 nodes (0-1)
node 0 cpus: 0-15,32-47
node 0 size: 128042 MB
node 0 free: 127034 MB
node 1 cpus: 16-31,48-63
node 1 size: 129006 MB
node 1 free: 128450 MB
node distances:
node  0  1
  0: 10 12
  1: 12 10
```

9. /proc/meminfo

```
MemTotal: 263218052 kB
```

10. who -r

```
run-level 3 Jul 26 06:22
```

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 lvm2-monitor mdmonitor microcode nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sep5 sshd sssd sysstat systemd-network-generator tuned udisks2 upower
enabled-runtime	systemd-remount-fs
disabled	arp-ethers blk-availability canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot chrony-wait console-getty cpupower debug-shell kvm_stat man-db-restart-cache-update nftables powertop rdisc rhsm rhsm-facts rpmbd-rebuild serial-getty@ sshd-keygen@ systemd-boot-check-no-failures systemd-pstore systemd-sysex indirect sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo

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### Platform Notes (Continued)

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=/dev/mapper/rhel-root  
ro  
crashkernel=1G-4G:192M,4G-64G:256M,64G-:512M  
resume=/dev/mapper/rhel-swap  
rd.lvm.lv=rhel/root  
rd.lvm.lv=rhel/swap

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
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

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## Platform Notes (Continued)

-----  
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/spec2017-ic2023  
Filesystem Type Size Used Avail Use% Mounted on  
/dev/mapper/rhel-home xfs 1.7T 69G 1.7T 4% /home  
-----

-----  
22. /sys/devices/virtual/dmi/id  
Vendor: XFUSION  
Product: 1288H V7  
Product Family: Eagle Stream  
Serial: serial  
-----

-----  
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:  
8x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800, configured at 4400  
-----

-----  
24. 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 | 502.gcc\_r(peak)  
-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.  
-----

=====  
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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### Compiler Version Notes (Continued)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2023.0.0 Build 20221201  
Copyright (C) 1985-2022 Intel Corporation. All rights reserved.

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

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

=====  
Fortran | 548.exchange2\_r(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

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

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**Tested by:** xFusion

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

## Base Portability Flags (Continued)

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
```

## 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

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

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## xFusion

SPECrate®2017\_int\_base = 272

FusionServer 1288H V7 (Intel Xeon Gold 6421N)

SPECrate®2017\_int\_peak = 281

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

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

## Peak Portability Flags (Continued)

```
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
-lqkmalloc
```

```
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
```

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

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

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**xFusion**

SPECrate®2017\_int\_base = 272

FusionServer 1288H V7 (Intel Xeon Gold 6421N)

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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

## Peak Optimization Flags (Continued)

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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