



SPEC CPU®2017 Integer Rate Result

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xFusion

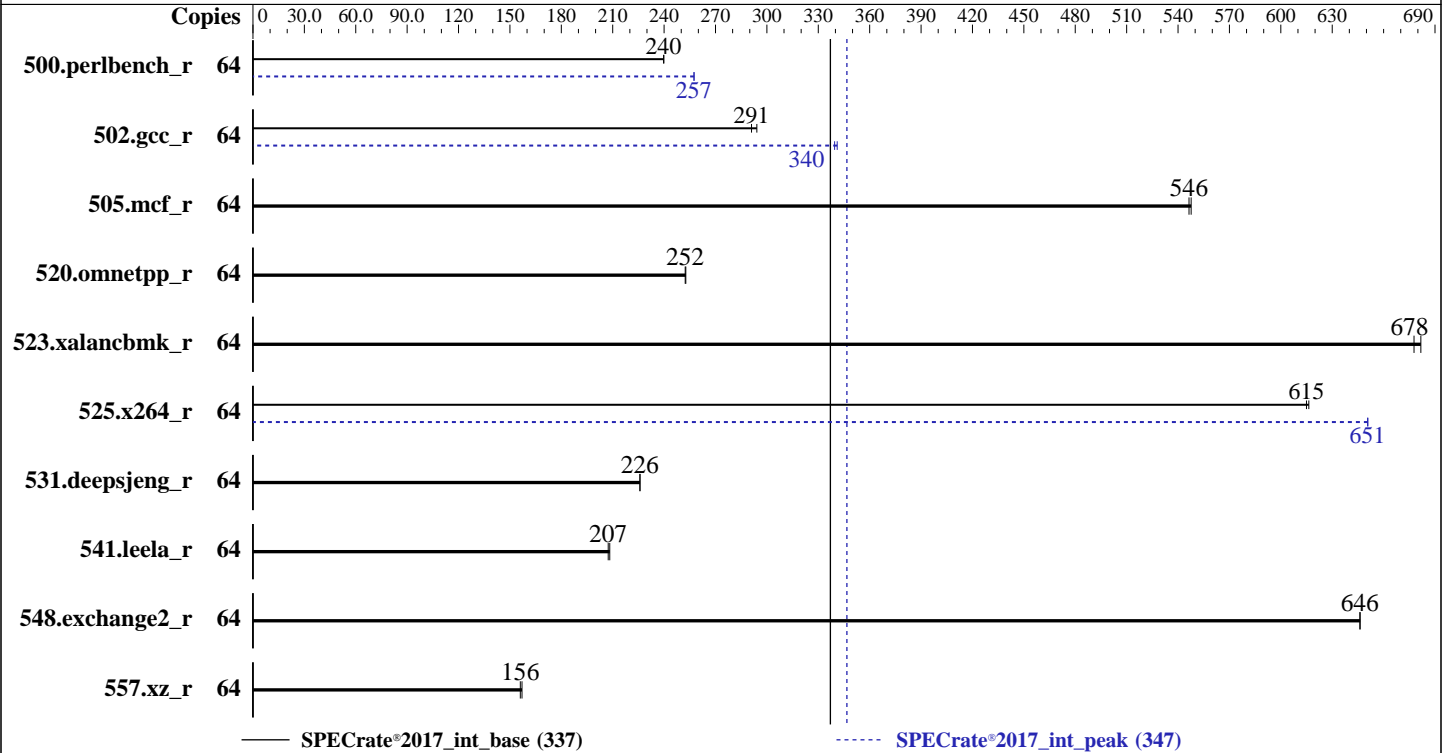
SPECrate®2017_int_base = 337

FusionServer 5288 V7 (Intel Xeon Platinum 8444H)

SPECrate®2017_int_peak = 347

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 Platinum 8444H
Max MHz: 4000
Nominal: 2900
Enabled: 32 cores, 2 chips, 2 threads/core
Orderable: 1,2 chips
Cache L1: 32 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 45 MB I+D on chip per chip
Other: None
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-4800B-R)
Storage: 1 x 1920 GB SATA SSD
Other: None

Software

OS: Red Hat Enterprise Linux release 9.0 (Plow)
5.14.0-70.13.1.el9_0.x86_64
Compiler: C/C++: Version 2023.0 of Intel oneAPI DPC++/C++ Compiler for Linux;
Fortran: Version 2023.0 of Intel Fortran Compiler for Linux;
Parallel: No
Firmware: Version 2.00.55 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	425	240	425	240			64	396	258	396	257		
502.gcc_r	64	311	291	308	294			64	266	341	267	340		
505.mcf_r	64	189	548	189	546			64	189	548	189	546		
520.omnetpp_r	64	332	253	333	252			64	332	253	333	252		
523.xalancbmk_r	64	99.7	678	99.1	682			64	99.7	678	99.1	682		
525.x264_r	64	182	615	182	616			64	172	651	172	651		
531.deepsjeng_r	64	325	226	325	226			64	325	226	325	226		
541.leela_r	64	509	208	511	207			64	509	208	511	207		
548.exchange2_r	64	259	646	260	646			64	259	646	260	646		
557.xz_r	64	440	157	443	156			64	440	157	443	156		

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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), 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/spec2017-1.1.9-ic2023/lib/intel64:/home/spec2017-1.1.9-ic2023/lib/ia32:/home/spec2017-1.1.9-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 SNC4 (4-clusters)

Sysinfo program /home/spec2017-1.1.9-ic2023/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost.localdomain Mon Jul 10 20:36:03 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
20:36:03 up 10 min, 1 user, load average: 0.03, 0.04, 0.04
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
root tty1 20:26 1:07 1.22s 0.06s -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) 2060221
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) 2060221
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited

5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 30
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 2 -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 2 --output_format all
--nopower --runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.131/templogs/preenv.intrate.131.0.log --lognum 131.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/spec2017-1.1.9-ic2023

6. /proc/cpuinfo
model name : Intel(R) Xeon(R) Platinum 8444H
vendor_id : GenuineIntel
cpu family : 6
model : 143
stepping : 6
microcode : 0x2b000111

```

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### Platform Notes (Continued)

```
bugs : spectre_v1 spectre_v2 spec_store_bypass swappg
cpu cores : 16
siblings : 32
2 physical ids (chips)
64 processors (hardware threads)
physical id 0: core ids 0-15
physical id 1: core ids 0-15
physical id 0: apicids 0-31
physical id 1: apicids 128-159
```

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) Platinum 8444H
BIOS Model name: Intel(R) Xeon(R) Platinum 8444H
CPU family: 6
Model: 143
Thread(s) per core: 2
Core(s) per socket: 16
Socket(s): 2
Stepping: 6
BogoMIPS: 5800.00
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_l1d 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 (2 instances)
NUMA node(s): 8
NUMA node0 CPU(s): 0-3,32-35
NUMA node1 CPU(s): 4-7,36-39
NUMA node2 CPU(s): 8-11,40-43
NUMA node3 CPU(s): 12-15,44-47
```

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### Platform Notes (Continued)

```

NUMA node4 CPU(s): 16-19,48-51
NUMA node5 CPU(s): 20-23,52-55
NUMA node6 CPU(s): 24-27,56-59
NUMA node7 CPU(s): 28-31,60-63
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/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   | 45M      | 90M      | 15   | Unified     | 3     | 49152 | 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: 0-3,32-35
node 0 size: 63535 MB
node 0 free: 63032 MB
node 1 cpus: 4-7,36-39
node 1 size: 64510 MB
node 1 free: 63091 MB
node 2 cpus: 8-11,40-43
node 2 size: 64510 MB
node 2 free: 64274 MB
node 3 cpus: 12-15,44-47
node 3 size: 64510 MB
node 3 free: 64313 MB
node 4 cpus: 16-19,48-51
node 4 size: 64510 MB
node 4 free: 64302 MB
node 5 cpus: 20-23,52-55
node 5 size: 64510 MB
node 5 free: 64303 MB
node 6 cpus: 24-27,56-59
node 6 size: 64510 MB
node 6 free: 61309 MB
node 7 cpus: 28-31,60-63
node 7 size: 64499 MB
node 7 free: 64267 MB
node distances:
node 0 1 2 3 4 5 6 7
0: 10 12 12 12 21 21 21 21
1: 12 10 12 12 21 21 21 21
2: 12 12 10 12 21 21 21 21
3: 12 12 12 10 21 21 21 21
4: 21 21 21 21 10 12 12 12
5: 21 21 21 21 12 10 12 12
6: 21 21 21 21 12 12 10 12
7: 21 21 21 21 12 12 12 10

```

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### Platform Notes (Continued)

9. /proc/meminfo  
MemTotal: 527457680 kB

10. who -r  
run-level 3 Jul 10 20:25

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 getty@ irqbalance kdump lvm2-monitor mdmonitor microcode nis-domainname  
rhsmcrted 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 firewalld  
kvm\_stat man-db-restart-cache-update nftables powertop rdisc rhsm rhsm-facts rpmdb-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

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

(Continued on next page)



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### Platform Notes (Continued)

```

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/spec2017-1.1.9-ic2023
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 1.7T 67G 1.7T 4% /home

```

```

22. /sys/devices/virtual/dmi/id
Vendor: XFUSION
Product: 5288 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:

```

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### Platform Notes (Continued)

16x Samsung M321R4GA3BB6-CQKDG 32 GB 2 rank 4800

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

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

-----  
C++ | 520.omnetpp\_r(base, peak) 523.xalancbnk\_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.  
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## 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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## xFusion

SPECrate®2017\_int\_base = 337

FusionServer 5288 V7 (Intel Xeon Platinum 8444H)

SPECrate®2017\_int\_peak = 347

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

**Test Date:** Jul-2023  
**Hardware Availability:** Jan-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
-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
```

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

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## xFusion

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**CPU2017 License:** 6488  
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**Test Date:** Jul-2023  
**Hardware Availability:** Jan-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
-lqkmallocc
```

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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