



# SPEC CPU®2017 Integer Rate Result

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Inspur Electronic Information Industry Co., Ltd.  
(IEI)

SPECrate®2017\_int\_base = 559

NF5280M7 (Intel Xeon Gold 6438N)

SPECrate®2017\_int\_peak = 576

CPU2017 License: 3358

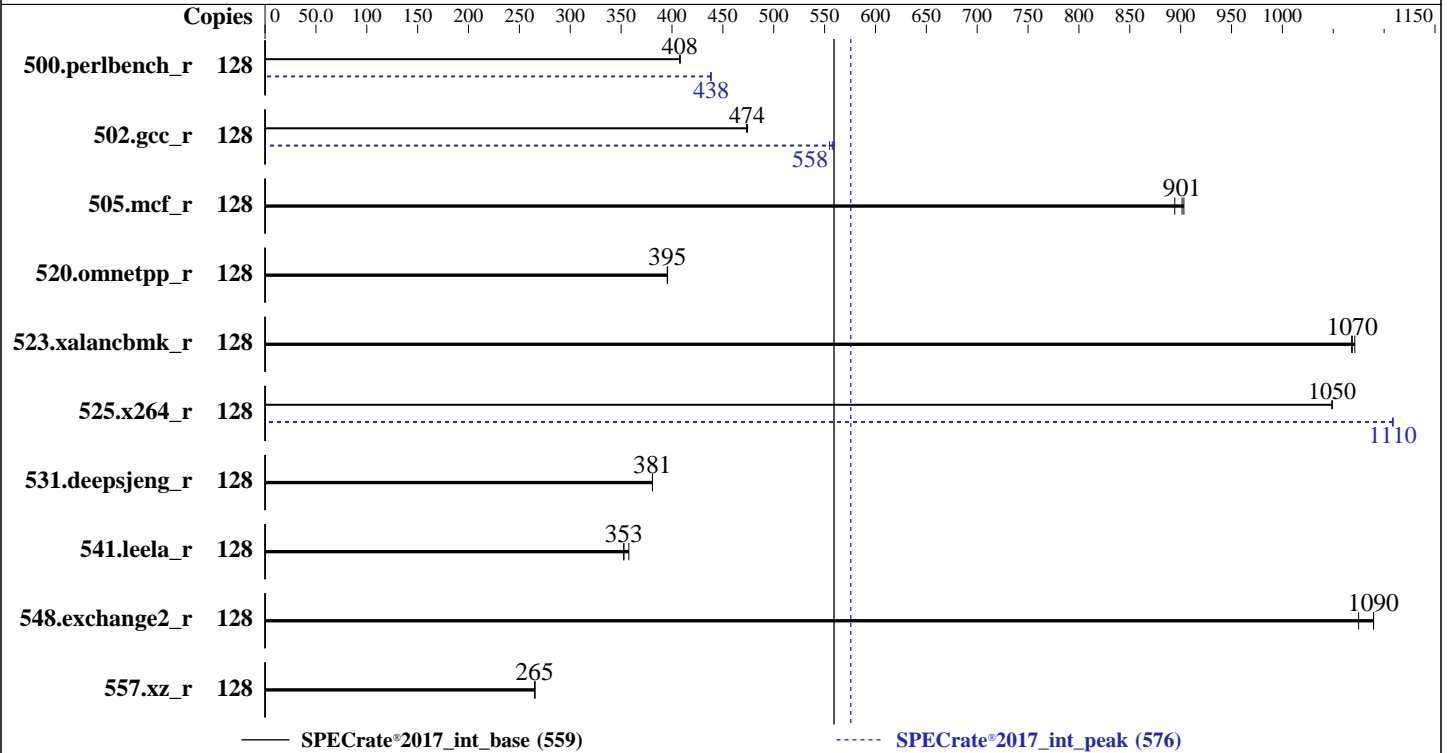
Test Date: May-2023

Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)

Hardware Availability: Apr-2023

Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)

Software Availability: Dec-2022



## Hardware

CPU Name: Intel Xeon Gold 6438N  
 Max MHz: 3600  
 Nominal: 2000  
 Enabled: 48 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: 60 MB I+D on chip per chip  
 Other: None  
 Memory: 512 GB (16 x 32 GB 2Rx4 PC5-4800B-R)  
 Storage: 1 x 1 TB NVME SSD  
 Other: None

## Software

OS: Red Hat Enterprise Linux 9.0 (Plow)  
 5.14.0-70.22.1.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 03.01.00 released Dec-2022  
 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	128	500	408	500	408	<b>500</b>	<b>408</b>	128	465	438	<b>465</b>	<b>438</b>	465	438
502.gcc_r	128	383	473	<b>383</b>	<b>474</b>	382	474	128	324	559	<b>325</b>	<b>558</b>	327	555
505.mcf_r	128	229	903	<b>229</b>	<b>901</b>	231	894	128	229	903	<b>229</b>	<b>901</b>	231	894
520.omnetpp_r	128	424	396	<b>425</b>	<b>395</b>	425	395	128	424	396	<b>425</b>	<b>395</b>	425	395
523.xalancbmk_r	128	126	1070	127	1070	<b>126</b>	<b>1070</b>	128	126	1070	127	1070	<b>126</b>	<b>1070</b>
525.x264_r	128	<b>214</b>	<b>1050</b>	214	1050	214	1050	128	202	1110	202	1110	<b>202</b>	<b>1110</b>
531.deepsjeng_r	128	<b>385</b>	<b>381</b>	385	381	385	381	128	<b>385</b>	<b>381</b>	385	381	385	381
541.leela_r	128	601	353	<b>601</b>	<b>353</b>	593	358	128	601	353	<b>601</b>	<b>353</b>	593	358
548.exchange2_r	128	<b>308</b>	<b>1090</b>	308	1090	312	1070	128	<b>308</b>	<b>1090</b>	308	1090	312	1070
557.xz_r	128	521	265	<b>522</b>	<b>265</b>	522	265	128	521	265	<b>522</b>	<b>265</b>	522	265

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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/CPU2017/lib/intel64:/home/CPU2017/lib/ia32:/home/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:  
 ENERGY\_PERF\_BIAS\_CFG mode set to Performance  
 Hardware Prefetch set to Disable  
 VT Support set to Disable  
 Sub NUMA Cluster (SNC) set to SNC4

Sysinfo program /home/CPU2017/bin/sysinfo  
 Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
 running on localhost.localdomain Fri May 19 06:16:15 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. `sysctl`
17. `/sys/kernel/mm/transparent_hugepage`
18. `/sys/kernel/mm/transparent_hugepage/khugepaged`
19. OS release
20. Disk information
21. `/sys/devices/virtual/dmi/id`
22. `dmidecode`

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## Platform Notes (Continued)

23. BIOS

```
1. uname -a
Linux localhost.localdomain 5.14.0-70.22.1.el9_0.x86_64 #1 SMP PREEMPT Tue Aug 2 10:02:12 EDT 2022 x86_64
x86_64 x86_64 GNU/Linux
```

```
2. w
06:16:15 up 0 min, 1 user, load average: 0.26, 0.07, 0.02
USER      TTY      LOGIN@  IDLE   JCPU   PCPU WHAT
root      tty1    06:16   7.00s  0.85s  0.00s -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) 2062191
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) 2062191
virtual memory (kbytes, -v) unlimited
file locks (-x) unlimited
```

```
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 28
login -- root
-bash
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 -c
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=64 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=128 --configfile
ic2023.0-lin-sapphirerapids-rate-20221201.cfg --define smt-on --define cores=64 --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/CPU2017.019/temlogs/preenv.intrate.019.0.log --lognum 019.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/CPU2017
```

```
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Gold 6438N
vendor_id      : GenuineIntel
cpu family     : 6
```

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## Platform Notes (Continued)

```

model          : 143
stepping       : 7
microcode     : 0x2b000130
bugs          : spectre_v1 spectre_v2 spec_store_bypass swappg
cpu cores     : 32
siblings      : 64
2 physical ids (chips)
128 processors (hardware threads)
physical id 0: core ids 0-31
physical id 1: core ids 0-31
physical id 0: apicids 0-63
physical id 1: apicids 128-191

```

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):                128
On-line CPU(s) list:   0-127
Vendor ID:             GenuineIntel
BIOS Vendor ID:       Intel(R) Corporation
Model name:            Intel(R) Xeon(R) Gold 6438N
BIOS Model name:      Intel(R) Xeon(R) Gold 6438N
CPU family:            6
Model:                 143
Thread(s) per core:    2
Core(s) per socket:    32
Socket(s):             2
Stepping:              7
CPU max MHz:           3600.0000
CPU min MHz:           800.0000
BogoMIPS:              4000.00
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 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 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 hwp hwp_act_window hwp_epp hwp_pkg_req
                        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
L1d cache:             3 MiB (64 instances)
L1i cache:             2 MiB (64 instances)
L2 cache:              128 MiB (64 instances)
L3 cache:              120 MiB (2 instances)
NUMA node(s):         4

```

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## Platform Notes (Continued)

```

NUMA node0 CPU(s):          0-15,64-79
NUMA node1 CPU(s):          16-31,80-95
NUMA node2 CPU(s):          32-47,96-111
NUMA node3 CPU(s):          48-63,112-127
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	3M	12	Data	1	64	1	64
L1i	32K	2M	8	Instruction	1	64	1	64
L2	2M	128M	16	Unified	2	2048	1	64
L3	60M	120M	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: 0-15,64-79
node 0 size: 128583 MB
node 0 free: 128114 MB
node 1 cpus: 16-31,80-95
node 1 size: 128980 MB
node 1 free: 128620 MB
node 2 cpus: 32-47,96-111
node 2 size: 129017 MB
node 2 free: 128344 MB
node 3 cpus: 48-63,112-127
node 3 size: 129006 MB
node 3 free: 128393 MB
node distances:
node  0  1  2  3
0:  10  12  21  21
1:  12  10  21  21
2:  21  21  10  12
3:  21  21  12  10

```

9. /proc/meminfo

MemTotal: 527962104 kB

10. who -r

run-level 3 May 19 06:15

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 lvm2-monitor mdmonitor microcode nis-domainname rhsmcertd rsyslog selinux-autorelabel-mark sep5 sshd sssd systemd-network-generator udisks2 upower
enabled-runtime	systemd-remount-fs
disabled	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 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-5.14.0-70.22.1.el9_0.x86_64
root=/dev/mapper/rhel-root
ro
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap

```

### 15. cpupower frequency-info

```

analyzing CPU 0:
  current policy: frequency should be within 800 MHz and 3.60 GHz.
                   The governor "performance" may decide which speed to use
                   within this range.

boost state support:
  Supported: yes
  Active: yes

```

### 16. 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	20
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	60
vm.watermark_boost_factor	15000
vm.watermark_scale_factor	10
vm.zone_reclaim_mode	0

### 17. /sys/kernel/mm/transparent\_hugepage

```

defrag          always defer defer+madvice [madvice] never

```

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## Platform Notes (Continued)

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

```
-----
18. /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
-----
```

```
-----
19. 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)
-----
```

```
-----
20. Disk information
SPEC is set to: /home/CPU2017
Filesystem Type Size Used Avail Use% Mounted on
/dev/mapper/rhel-home xfs 819G 158G 661G 20% /home
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor: IEI
Product: NF5280M7
Product Family: Not specified
Serial: 000000000
-----
```

```
-----
22. 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:
16x Samsung M321R4GA3BB6-CQKVG 32 GB 2 rank 4800
-----
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor: American Megatrends International, LLC.
BIOS Version: 03.01.00
BIOS Date: 12/29/2022
-----
```

## 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.
-----
```

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## Compiler Version Notes (Continued)

```
=====
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.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



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

Inspur Electronic Information Industry Co., Ltd.  
(IEI)

SPECrate®2017\_int\_base = 559

NF5280M7 (Intel Xeon Gold 6438N)

SPECrate®2017\_int\_peak = 576

CPU2017 License: 3358

Test Date: May-2023

Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)

Hardware Availability: Apr-2023

Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)

Software Availability: Dec-2022

## 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
-lqkmallo
```

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
-lqkmallo
```

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
-lqkmallo
```

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx



# SPEC CPU®2017 Integer Rate Result

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SPECrate®2017\_int\_peak = 576

CPU2017 License: 3358

Test Date: May-2023

Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)

Hardware Availability: Apr-2023

Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)

Software Availability: Dec-2022

## 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
-lqkmallo

```

```

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 -ljemallo

```

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
-lqkmallo

```

557.xz\_r: basepeak = yes

C++ benchmarks:

(Continued on next page)



# SPEC CPU®2017 Integer Rate Result

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CPU2017 License: 3358

Test Date: May-2023

Test Sponsor: Inspur Electronic Information Industry Co., Ltd. (IEI)

Hardware Availability: Apr-2023

Tested by: Inspur Electronic Information Industry Co., Ltd. (IEI)

Software Availability: Dec-2022

## Peak Optimization Flags (Continued)

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/Inspur-Platform-Settings-intel-V3.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/Inspur-Platform-Settings-intel-V3.xml>

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