



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2024 Standard Performance Evaluation Corporation

**ASUSTeK Computer Inc.**  
ASUS RS720-E10-RS12(Z12PP-D32) Server System  
(3.20 GHz, Intel Xeon Gold 5315Y)

**SPECrate®2017\_int\_base = 149**  
**SPECrate®2017\_int\_peak = 153**

CPU2017 License: 9016

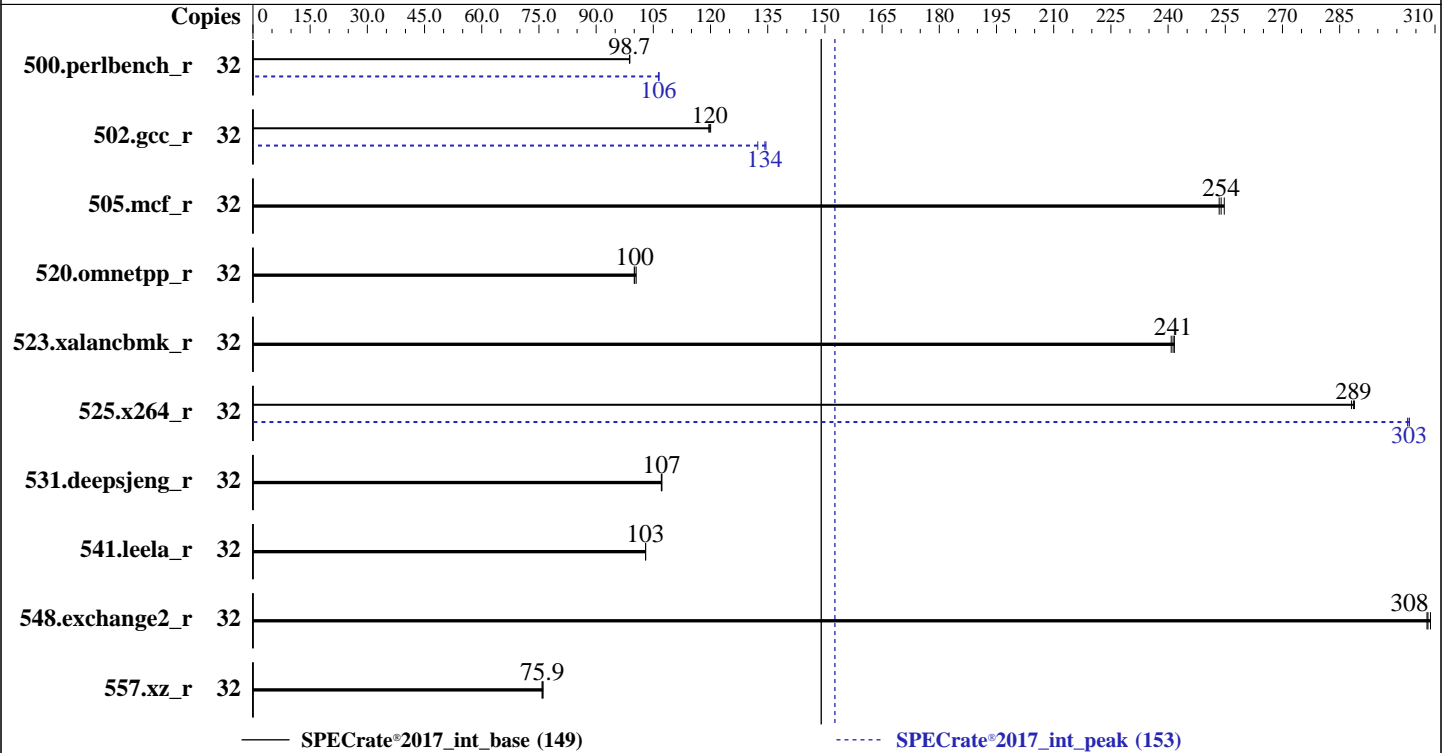
Test Sponsor: ASUSTeK Computer Inc.

Tested by: ASUSTeK Computer Inc.

Test Date: Feb-2023

Hardware Availability: Apr-2022

Software Availability: May-2022



### Hardware

CPU Name: Intel Xeon Gold 5315Y  
 Max MHz: 3600  
 Nominal: 3200  
 Enabled: 16 cores, 2 chips, 2 threads/core  
 Orderable: 1, 2 chip(s)  
 Cache L1: 32 KB I + 48 KB D on chip per core  
 L2: 1.25 MB I+D on chip per core  
 L3: 12 MB I+D on chip per chip  
 Other: None  
 Memory: 1 TB (16 x 64 GB 2Rx4 PC4-3200AA-R, running at 2933)  
 Storage: 1 x 1 TB SATA SSD  
 Other: None

### Software

OS: Red Hat Enterprise Linux release 8.4 (Ootpa) 4.18.0-305.25.1.el8\_4.x86\_64  
 Compiler: C/C++: Version 2022.1 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2022.1 of Intel Fortran Compiler for Linux;  
 Parallel: No  
 Firmware: Version 0802 released Apr-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	32	516	98.7	<b><u>516</u></b>	<b><u>98.7</u></b>	515	98.8	32	479	106	478	107	<b><u>479</u></b>	<b><u>106</u></b>
502.gcc_r	32	379	120	<b><u>378</u></b>	<b><u>120</u></b>	378	120	32	337	135	<b><u>338</u></b>	<b><u>134</u></b>	342	132
505.mcf_r	32	<b><u>204</u></b>	<b><u>254</u></b>	203	255	204	253	32	<b><u>204</u></b>	<b><u>254</u></b>	203	255	204	253
520.omnetpp_r	32	418	101	<b><u>419</u></b>	<b><u>100</u></b>	420	100	32	418	101	<b><u>419</u></b>	<b><u>100</u></b>	420	100
523.xalancbmk_r	32	<b><u>140</u></b>	<b><u>241</u></b>	140	241	140	242	32	<b><u>140</u></b>	<b><u>241</u></b>	140	241	140	242
525.x264_r	32	<b><u>194</u></b>	<b><u>289</u></b>	194	288	194	289	32	185	303	<b><u>185</u></b>	<b><u>303</u></b>	185	303
531.deepsjeng_r	32	342	107	<b><u>342</u></b>	<b><u>107</u></b>	342	107	32	342	107	<b><u>342</u></b>	<b><u>107</u></b>	342	107
541.leela_r	32	<b><u>515</u></b>	<b><u>103</u></b>	515	103	515	103	32	<b><u>515</u></b>	<b><u>103</u></b>	515	103	515	103
548.exchange2_r	32	272	308	<b><u>272</u></b>	<b><u>308</u></b>	271	309	32	272	308	<b><u>272</u></b>	<b><u>308</u></b>	271	309
557.xz_r	32	456	75.8	454	76.1	<b><u>455</u></b>	<b><u>75.9</u></b>	32	456	75.8	454	76.1	<b><u>455</u></b>	<b><u>75.9</u></b>

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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"  
OS set to performance mode via cpupower frequency-set -g performance

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/home/ic22u1/lib/intel64:/home/ic22u1/lib/ia32:/home/ic22u1/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:  
VT-d = Disabled  
Patrol Scrub = Disabled  
Engine Boost = Aggressive  
SR-IOV Support = Disabled  
BMC Configuration:  
Fan mode = Full speed mode

Sysinfo program /home/ic22u1/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Sat Feb 11 07:31:58 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 239 (239-45.el8\_4.3)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
16. sysctl
17. /sys/kernel/mm/transparent\_hugepage
18. /sys/kernel/mm/transparent\_hugepage/khugepaged
19. OS release
20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities
21. Disk information

(Continued on next page)



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## Platform Notes (Continued)

22. /sys/devices/virtual/dmi/id  
23. dmidecode  
24. BIOS

1. uname -a  
Linux localhost.localdomain 4.18.0-305.25.1.el8\_4.x86\_64 #1 SMP Mon Oct 18 14:34:11 EDT 2021 x86\_64 x86\_64 x86\_64 GNU/Linux

2. w  
07:31:58 up 1 day, 2:34, 1 user, load average: 7.78, 19.18, 24.71  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root ttyl - Fri04 26:33m 1.11s 0.01s /bin/bash ./rate.sh

3. Username  
From environment variable \$USER: root

4. ulimit -a  
core file size (blocks, -c) 0  
data seg size (kbytes, -d) unlimited  
scheduling priority (-e) 0  
file size (blocks, -f) unlimited  
pending signals (-i) 4126725  
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) 4126725  
virtual memory (kbytes, -v) unlimited  
file locks (-x) unlimited

5. sysinfo process ancestry  
/usr/lib/systemd/systemd --switched-root --system --deserialize 18  
login -- root  
-bash  
/bin/bash ./rate.sh  
/bin/bash ./rate.sh  
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=32 -c  
ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=16 --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=32 --configfile  
ic2022.1-lin-core-avx512-rate-20220316.cfg --define smt-on --define cores=16 --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/CPU2017.330/tempslogs/preenv.intrate.330.0.log --lognum 330.0 --from\_runcpu 2  
specperl \$SPEC/bin/sysinfo  
\$SPEC = /home/ic22u1

6. /proc/cpuinfo  
model name : Intel(R) Xeon(R) Gold 5315Y CPU @ 3.20GHz

(Continued on next page)



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## Platform Notes (Continued)

```
vendor_id      : GenuineIntel
cpu family     : 6
model         : 106
stepping      : 6
microcode     : 0xd000331
bugs          : spectre_v1 spectre_v2 spec_store_bypass swapgs
cpu cores     : 8
siblings      : 16
2 physical ids (chips)
32 processors (hardware threads)
physical id 0: core ids 0-7
physical id 1: core ids 0-7
physical id 0: apicids 0-15
physical id 1: apicids 64-79
```

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 2.32.1:

```
Architecture:          x86_64
CPU op-mode(s):        32-bit, 64-bit
Byte Order:             Little Endian
CPU(s):                 32
On-line CPU(s) list:   0-31
Thread(s) per core:    2
Core(s) per socket:    8
Socket(s):              2
NUMA node(s):          2
Vendor ID:              GenuineIntel
BIOS Vendor ID:        Intel
CPU family:             6
Model:                  106
Model name:             Intel(R) Xeon(R) Gold 5315Y CPU @ 3.20GHz
BIOS Model name:       Intel(R) Xeon(R) Gold 5315Y CPU @ 3.20GHz
Stepping:               6
CPU MHz:                1729.396
CPU max MHz:            3600.0000
CPU min MHz:            800.0000
BogoMIPS:               6400.00
Virtualization:         VT-x
L1d cache:              48K
L1i cache:              32K
L2 cache:               1280K
L3 cache:               12288K
NUMA node0 CPU(s):     0-7,16-23
NUMA node1 CPU(s):     8-15,24-31
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 pni
                        pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca
                        sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm
                        abm 3dnowprefetch cpuid_fault epb cat_l3 invpcid_single intel_ppin ssbd mba ibrs ibpb
                        stibp ibrs_enhanced tpr_shadow vnmi flexpriority ept vpid ept_ad fsgsbase tsc_adjust
                        bmi1 hle 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
                        wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req avx512vbmi
                        umip pku ospke avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme
```

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## Platform Notes (Continued)

avx512\_vpopcntdq la57 rdpid fsrm md\_clear pconfig flush\_llid arch\_capabilities

### 8. numactl --hardware

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

```
available: 2 nodes (0-1)
node 0 cpus: 0-7,16-23
node 0 size: 515631 MB
node 0 free: 514076 MB
node 1 cpus: 8-15,24-31
node 1 size: 516089 MB
node 1 free: 514218 MB
node distances:
node  0  1
  0: 10  20
  1:  20  10
```

### 9. /proc/meminfo

```
MemTotal: 1056482480 kB
```

### 10. who -r

```
run-level 3 Feb 10 04:58
```

### 11. Systemd service manager version: systemd 239 (239-45.el8\_4.3)

```
Default Target Status
multi-user running
```

### 12. Services, from systemctl list-unit-files

```
STATE UNIT FILES
enabled NetworkManager NetworkManager-dispatcher NetworkManager-wait-online atd auditd autovt@ chronyd
crond firewalld getty@ import-state insights-client-boot irqbalance iscsi iscsi-onboot kdump
libstoragemgmt lm_sensors loadmodules lvm2-monitor mcelog mdmonitor microcode multipathd
nvme-fc-boot-connections pmcd pmie pmlogger rhsmcertd rsyslog selinux-autorelabel-mark smartd sshd
sssd syslog sysstat timedatex tuned udisks2 vdo
disabled arp-ethers blk-availability chrony-wait console-getty cpupower debug-shell ebttables fancontrol
grafana-server iprdump iprinit iprupdate ipsec iscsid iscsiui kpatch kvm_stat ledmon nftables
nis-domainname nvme-autoconnect oddjobd pmfind pmie_check pmlogger_check pmlogger_daily_report
pmlogger_daily_report-poll pmproxy podman-auto-update postfix powertop psacct ras-mc-ctl
rasdaemon rdisc rhcd rhsm rhsm-facts rrdcached saslauthd serial-getty@ sshd-keygen@
systemd-resolved tcsd
indirect sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh sssd-sudo
masked systemd-timedated
```

### 13. Linux kernel boot-time arguments, from /proc/cmdline

```
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-4.18.0-305.25.1.el8_4.x86_64
root=/dev/mapper/rhel-root
ro
resume=/dev/mapper/rhel-swap
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
rhgb
quiet
```

### 14. cpupower frequency-info

(Continued on next page)



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## Platform Notes (Continued)

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

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

-----  
16. sysctl  
kernel.numa\_balancing 1  
kernel.randomize\_va\_space 2  
vm.compaction\_proactiveness 0  
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

-----  
17. /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

-----  
18. /sys/kernel/mm/transparent\_hugepage/khugepaged  
alloc\_sleep\_millisecs 60000  
defrag 1  
max\_ptes\_none 511  
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 8.4 (Ootpa)  
redhat-release Red Hat Enterprise Linux release 8.4 (Ootpa)  
system-release Red Hat Enterprise Linux release 8.4 (Ootpa)

-----  
20. Kernel self-reported vulnerability status, from /sys/devices/system/cpu/vulnerabilities  
itlb\_multihit Not affected

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lltf	Not affected
mds	Not affected
meltdown	Not affected
spec_store_bypass	Mitigation: Speculative Store Bypass disabled via prctl and seccomp
spectre_v1	Mitigation: usercopy/swapgs barriers and __user pointer sanitization
spectre_v2	Mitigation: Enhanced IBRS, IBPB: conditional, RSB filling
srbsds	Not affected
tsx_async_abort	Not affected

For more information, see the Linux documentation on hardware vulnerabilities, for example <https://www.kernel.org/doc/html/latest/admin-guide/hw-vuln/index.html>

-----

21. Disk information  
SPEC is set to: /home/ic22ul

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/mapper/rhel-home	xfs	878G	120G	759G	14%	/home

-----

22. /sys/devices/virtual/dmi/id

Vendor:	ASUSTeK COMPUTER INC.
Product:	RS720-E10-RS12
Product Family:	Server
Serial:	012345678901

-----

23. dmidecode  
Additional information from dmidecode 3.2 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 M393A8G40AB2-CWE 64 GB 2 rank 3200, configured at 2933

-----

24. BIOS  
(This section combines info from /sys/devices and dmidecode.)

BIOS Vendor:	American Megatrends Inc.
BIOS Version:	0802
BIOS Date:	04/29/2022
BIOS Revision:	8.2

## Compiler Version Notes

=====

C	502.gcc_r(peak)
---	-----------------

-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2022.1.0 Build 20220316  
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 2022.1.0 Build 20220316  
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## Compiler Version Notes (Continued)

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

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2022.1.0 Build 20220316  
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 2022.1.0 Build 20220316  
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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 2022.1.0 Build 20220316  
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-----  
Fortran | 548.exchange2\_r(base, peak)  
-----

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2022.1.0 Build 20220316  
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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

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# SPEC CPU®2017 Integer Rate Result

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**ASUSTeK Computer Inc.**  
ASUS RS720-E10-RS12(Z12PP-D32) Server System  
(3.20 GHz, Intel Xeon Gold 5315Y)

SPECrate®2017\_int\_base = 149

SPECrate®2017\_int\_peak = 153

**CPU2017 License:** 9016

**Test Sponsor:** ASUSTeK Computer Inc.

**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Feb-2023

**Hardware Availability:** Apr-2022

**Software Availability:** May-2022

## Base Portability Flags (Continued)

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 -xCORE-AVX512 -O3 -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

C++ benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

Fortran benchmarks:

```
-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math -flto
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmalloc
```

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx



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**Test Date:** Feb-2023

**Hardware Availability:** Apr-2022

**Software Availability:** May-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.profdata(pass 2) -xCORE-AVX512
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-strict-overflow
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmallo
```

```
502.gcc_r: -m32
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/ia32_lin
-std=gnu89 -Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX512
-Ofast -ffast-math -flto -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 -xCORE-AVX512 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/usr/local/intel/compiler/2022.1.0/linux/compiler/lib/intel64_lin
-lqkmallo
```

```
557.xz_r: basepeak = yes
```

C++ benchmarks:

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# SPEC CPU®2017 Integer Rate Result

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**CPU2017 License:** 9016  
**Test Sponsor:** ASUSTeK Computer Inc.  
**Tested by:** ASUSTeK Computer Inc.

**Test Date:** Feb-2023  
**Hardware Availability:** Apr-2022  
**Software Availability:** May-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-ic2022-official-linux64\\_revA.2022-10-12.html](http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.html)  
<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z12-V1.2.html>

You can also download the XML flags sources by saving the following links:

[http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64\\_revA.2022-10-12.xml](http://www.spec.org/cpu2017/flags/Intel-ic2022-official-linux64_revA.2022-10-12.xml)  
<http://www.spec.org/cpu2017/flags/ASUSTekPlatform-Settings-z12-V1.2.xml>

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