



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem ST50 V3  
(2.80 GHz, Intel Xeon 6315P)

SPECrate®2017\_int\_base = 41.6

SPECrate®2017\_int\_peak = 43.2

CPU2017 License: 9017

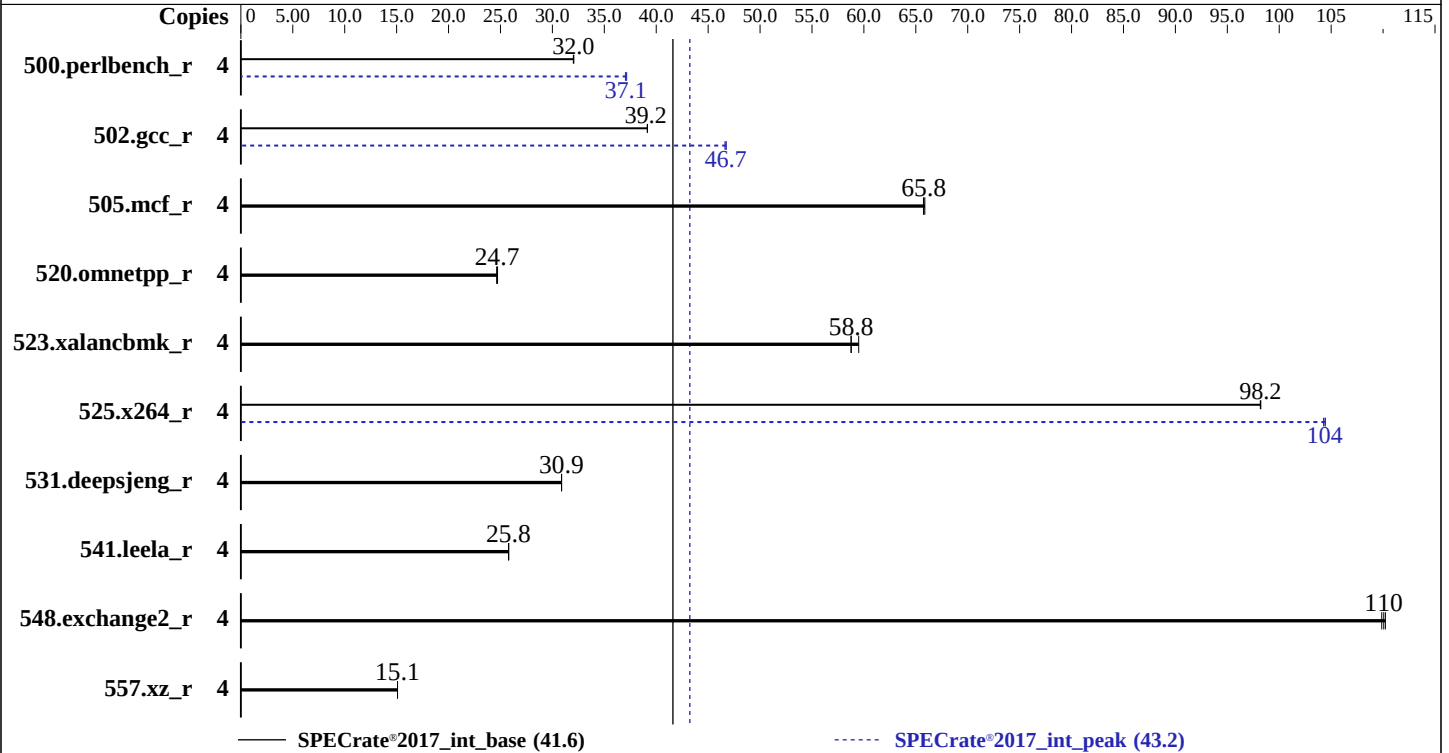
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: May-2025

Hardware Availability: Apr-2025

Software Availability: Jun-2024



## Hardware

CPU Name: Intel Xeon 6315P  
Max MHz: 5200  
Nominal: 2800  
Enabled: 4 cores, 1 chip  
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: 12 MB I+D on chip per chip  
Other: None  
Memory: 64 GB (2 x 32 GB 2Rx8 PC5-5600B-E, running at 4400)  
Storage: 1 x 960 GB SATA SSD  
Other: CPU Cooling: Air

## Software

OS: SUSE Linux Enterprise Server 15 SP6  
Kernel 6.4.0-150600.21-default  
Compiler: C/C++: Version 2024.1 of Intel oneAPI DPC++/C++ Compiler for Linux;  
Fortran: Version 2024.1 of Intel Fortran Compiler for Linux;  
Parallel: No  
Firmware: Lenovo BIOS Version CTE119B 7.10 released Feb-2025  
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 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 | 4      | 199        | 32.1        | <u>199</u>  | <u>32.0</u> | 199         | 32.0        | 4      | 172        | 37.0        | 171         | 37.2        | <u>172</u>  | <u>37.1</u> |
| 502.gcc_r       | 4      | <u>145</u> | <u>39.2</u> | 145         | 39.2        | 145         | 39.1        | 4      | 122        | 46.6        | 121         | 46.7        | <u>121</u>  | <u>46.7</u> |
| 505.mcf_r       | 4      | 98.3       | 65.7        | <u>98.3</u> | <u>65.8</u> | 98.1        | 65.9        | 4      | 98.3       | 65.7        | <u>98.3</u> | <u>65.8</u> | 98.1        | 65.9        |
| 520.omnetpp_r   | 4      | 213        | 24.6        | 212         | 24.7        | <u>213</u>  | <u>24.7</u> | 4      | 213        | 24.6        | 212         | 24.7        | <u>213</u>  | <u>24.7</u> |
| 523.xalancbmk_r | 4      | 71.9       | 58.8        | 71.0        | 59.5        | <u>71.9</u> | <u>58.8</u> | 4      | 71.9       | 58.8        | 71.0        | 59.5        | <u>71.9</u> | <u>58.8</u> |
| 525.x264_r      | 4      | 71.3       | 98.2        | <u>71.3</u> | <u>98.2</u> | 71.3        | 98.2        | 4      | 67.2       | 104         | 67.1        | 104         | <u>67.1</u> | <u>104</u>  |
| 531.deepsjeng_r | 4      | 148        | 30.9        | <u>148</u>  | <u>30.9</u> | 148         | 30.9        | 4      | 148        | 30.9        | <u>148</u>  | <u>30.9</u> | 148         | 30.9        |
| 541.leela_r     | 4      | 257        | 25.8        | 257         | 25.8        | <u>257</u>  | <u>25.8</u> | 4      | 257        | 25.8        | 257         | 25.8        | <u>257</u>  | <u>25.8</u> |
| 548.exchange2_r | 4      | 95.1       | 110         | <u>95.2</u> | <u>110</u>  | 95.4        | 110         | 4      | 95.1       | 110         | <u>95.2</u> | <u>110</u>  | 95.4        | 110         |
| 557.xz_r        | 4      | <u>286</u> | <u>15.1</u> | 286         | 15.1        | 286         | 15.1        | 4      | <u>286</u> | <u>15.1</u> | 286         | 15.1        | 286         | 15.1        |

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Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset 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/cpu2017-1.1.9-ic2024.1/lib/intel64:/home/cpu2017-1.1.9-ic2024.1/lib/ia32:/home/cpu2017-1.1.9-ic2024.1/je5.0.1-32"

MALLOC\_CONF = "retain:true"

## 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

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

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## General Notes (Continued)

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:

Choose Operating Mode set to Maximum Performance

Turbo Limit for 95W CPU set to Disabled

Sysinfo program /home/cpu2017-1.1.9-ic2024.1/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost Tue May 27 11:20:42 2025

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 254 (254.10+suse.84.ge8d77af424)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. sysctl
16. /sys/kernel/mm/transparent\_hugepage
17. /sys/kernel/mm/transparent\_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

-----  
1. uname -a  
Linux localhost 6.4.0-150600.21-default #1 SMP PREEMPT\_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09)  
x86\_64 x86\_64 x86\_64 GNU/Linux  
-----

-----  
2. w  
11:20:42 up 3 min, 1 user, load average: 0.01, 0.02, 0.00  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
-----

-----  
3. Username  
From environment variable \$USER: root  
-----

-----  
4. ulimit -a  
core file size (blocks, -c) unlimited  
-----

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### Platform Notes (Continued)

data seg size (kbytes, -d) unlimited  
scheduling priority (-e) 0  
file size (blocks, -f) unlimited  
pending signals (-i) 256787  
max locked memory (kbytes, -l) 8192  
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) 256787  
virtual memory (kbytes, -v) unlimited  
file locks (-x) unlimited

#### 5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
sshd: root [priv]
sshd: root@notty
/bin/bash ./02.remote_local_SPECcpu_1.01.sh
sh Run315-compliant-ic2024.1-lin-core-avx2-rate-int-smt-off-20240308.sh
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=4 -c
ic2024.1-lin-core-avx2-rate-20240308.cfg --define cores=4 --define physicalfirst --define no-numa --tune
base,peak -o all --define drop_caches intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=4 --configfile
ic2024.1-lin-core-avx2-rate-20240308.cfg --define cores=4 --define physicalfirst --define no-numa --tune
base,peak --output_format all --define drop_caches --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/cpu2017-1.1.9-ic2024.1
```

#### 6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6315P
vendor_id       : GenuineIntel
cpu family      : 6
model           : 183
stepping        : 1
microcode       : 0x12c
bugs             : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
cpu cores       : 4
siblings        : 4
1 physical ids (chips)
4 processors (hardware threads)
physical id 0:  core ids 0-3
physical id 0:  apicids 0,2,4,6
```

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 2.39.3:

```
Architecture:      x86_64
CPU op-mode(s):    32-bit, 64-bit
Address sizes:      42 bits physical, 48 bits virtual
```

(Continued on next page)



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## Platform Notes (Continued)

Byte Order: Little Endian  
CPU(s): 4  
On-line CPU(s) list: 0-3  
Vendor ID: GenuineIntel  
BIOS Vendor ID: Intel(R) Corporation  
Model name: Intel(R) Xeon(R) 6315P  
BIOS Model name: Intel(R) Xeon(R) 6315P none CPU @ 4.5GHz  
BIOS CPU family: 179  
CPU family: 6  
Model: 183  
Thread(s) per core: 1  
Core(s) per socket: 4  
Socket(s): 1  
Stepping: 1  
BogoMIPS: 5606.40  
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 vmx smx est tm2 ssse3 sdbg fma cx16  
xtpr pdcm sse4\_1 sse4\_2 x2apic movbe popcnt tsc\_deadline\_timer aes  
xsave avx f16c rdrand lahf\_lm abm 3dnowprefetch cpuid\_fault epb ssbd  
ibrs ibpb stibp ibrs\_enhanced tpr\_shadow flexpriority ept vpid ept\_ad  
fsgsbase tsc\_adjust bmi1 avx2 smep bmi2 erms invpcid rdseed adx smap  
clflushopt clwb intel\_pt sha\_ni xsaveopt xsavec xgetbv1 xsaves  
split\_lock\_detect user\_shstk avx\_vnni dtherm ida arat pln pts hfi  
vnmi umip pku ospke waitpkg gfni vaes vpclmulqdq tme rdpid movdiri  
movdir64b fsrm md\_clear serialize pconfig arch\_lbr ibt flush\_l1d  
arch\_capabilities  
Virtualization: VT-x  
L1d cache: 192 KiB (4 instances)  
L1i cache: 128 KiB (4 instances)  
L2 cache: 8 MiB (4 instances)  
L3 cache: 12 MiB (1 instance)  
NUMA node(s): 1  
NUMA node0 CPU(s): 0-3  
Vulnerability Gather data sampling: Not affected  
Vulnerability Itlb multihit: Not affected  
Vulnerability L1tf: Not affected  
Vulnerability Mds: Not affected  
Vulnerability Meltdown: Not affected  
Vulnerability Mmio stale data: Not affected  
Vulnerability Reg file data sampling: Not affected  
Vulnerability Retbleed: Not affected  
Vulnerability Spec rstack overflow: 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 / Automatic IBRS; IBPB conditional; RSB filling;  
PBRSE-eIBRS SW sequence; BHI BHI\_DIS\_S  
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      | 192K     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 32K      | 128K     | 8    | Instruction | 1     | 64    | 1        | 64             |
| L2   | 2M       | 8M       | 16   | Unified     | 2     | 2048  | 1        | 64             |
| L3   | 12M      | 12M      | 6    | Unified     | 3     | 32768 | 1        | 64             |

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## Platform Notes (Continued)

8. numactl --hardware

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

```
available: 1 nodes (0)
node 0 cpus: 0-3
node 0 size: 64223 MB
node 0 free: 63697 MB
node distances:
node 0
0: 10
```

9. /proc/meminfo

```
MemTotal: 65764700 kB
```

10. who -r

```
run-level 3 May 27 11:17
```

11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)

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

12. Services, from systemctl list-unit-files

| STATE           | UNIT FILES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enabled         | YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron getty@ irqbalance issue-generator kbdsettings klog lvm2-monitor nsd postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny                                                                                                                                                                                                                                                                           |
| enabled-runtime | systemd-remount-fs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| disabled        | autofs autostart-initscripts blk-availability boot-sysctl ca-certificates chrony-wait chronyd console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info firewallld fsidd gpm grub2-once haveged ipmi ipmievd issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd serial-getty@ smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd udisks2 |
| indirect        | systemd-userdbd wickedd                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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

```
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default
root=UUID=c0e6c4c1-34fd-49fd-bd0a-0f1c1d9d4e05
splash=silent
mitigations=auto
quiet
security=apparmor
```

14. cpupower frequency-info

```
analyzing CPU 0:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes
```

15. sysctl

```
kernel.numa_balancing 0
kernel.randomize_va_space 2
vm.compaction_proactiveness 20
```

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```
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
```

```
-----
16. /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
```

```
-----
17. /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
```

```
-----
18. OS release
From /etc/*-release /etc/*-version
os-release SUSE Linux Enterprise Server 15 SP6
```

```
-----
19. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2024.1
Filesystem      Type      Size      Used Avail Use% Mounted on
/dev/sda3       xfs       891G      49G  843G   6% /
```

```
-----
20. /sys/devices/virtual/dmi/id
Vendor:      Lenovo
Product:     ThinkSystem ST50 V3
Product Family: ThinkSystem
Serial:      1234567890
```

```
-----
21. dmidecode
Additional information from dmidecode 3.4 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:
  2x SK Hynix HMC88AGBEA081N 32 GB 2 rank 5600, configured at 4400
```

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## Platform Notes (Continued)

-----  
22. BIOS  
(This section combines info from /sys/devices and dmidecode.)  
BIOS Vendor: Lenovo  
BIOS Version: CTE119B-7.10  
BIOS Date: 02/20/2025  
BIOS Revision: 7.10  
Firmware Revision: 6.10

## Compiler Version Notes

=====

C | 502.gcc\_r(peak)

-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 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)

-----

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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)  
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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 2024.1.0 Build 20240308  
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-----

=====

Fortran | 548.exchange2\_r(base, peak)

-----

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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 -xCORE-AVX2 -O3 -ffast-math -flto

-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xCORE-AVX2 -O3 -ffast-math

-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xCORE-AVX2 -O3 -ffast-math -flto

-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-nostandard-realloc-lhs -align array32byte -auto

-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmalloc



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Lenovo Global Technology

ThinkSystem ST50 V3  
(2.80 GHz, Intel Xeon 6315P)

SPECrate®2017\_int\_base = 41.6

SPECrate®2017\_int\_peak = 43.2

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: May-2025

Hardware Availability: Apr-2025

Software Availability: Jun-2024

## 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.profdata(pass 2) -xCORE-AVX2 -flto
-Ofast -ffast-math -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-strict-overflow
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmallo

502.gcc_r: -m32 -L/opt/intel/oneapi/compiler/2024.1/lib32 -std=gnu89
-Wl, -z, muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2 -flto
-Ofast -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
```

(Continued on next page)



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## Peak Optimization Flags (Continued)

525.x264\_r: -w -std=c11 -m64 -Wl, -z,muldefs -xCORE-AVX2 -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -fno-alias  
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmallo

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/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Cat low-A.html>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.html>

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

<http://www.spec.org/cpu2017/flags/Lenovo-Platform-SPECcpu2017-Flags-V1.2-Cat low-A.xml>

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.xml>

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