



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Lenovo Global Technology

ThinkSystem SR250 V3  
(3.10 GHz, Intel Xeon 6333P)

SPECspeed®2017\_int\_base = 16.0

SPECspeed®2017\_int\_peak = 16.3

CPU2017 License: 9017

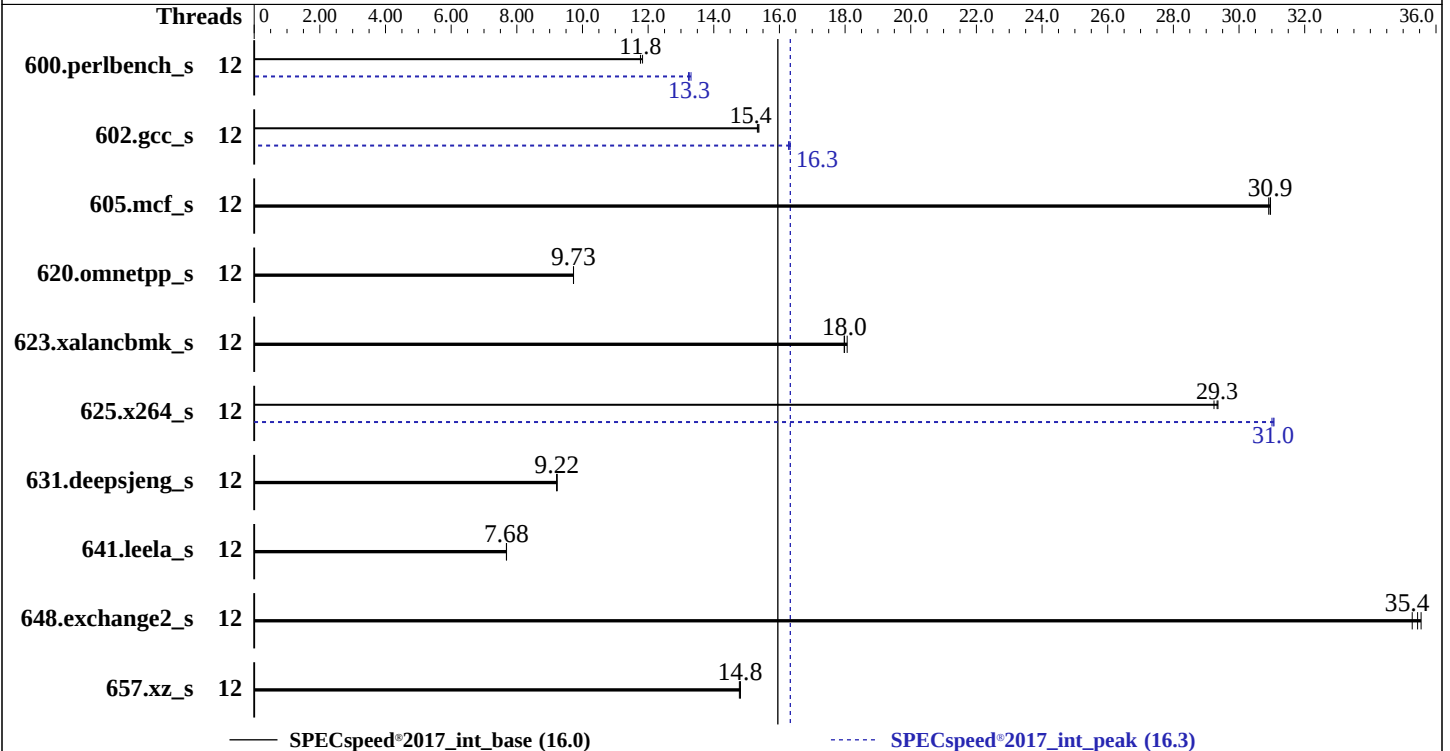
Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Apr-2025

Hardware Availability: Apr-2025

Software Availability: Nov-2024



### Hardware

CPU Name: Intel Xeon 6333P  
Max MHz: 5200  
Nominal: 3100  
Enabled: 6 cores, 1 chip, 2 threads/core  
Orderable: 1 chip  
Cache L1: 32 KB I + 48 KB D on chip per core  
L2: 2 MB I+D on chip per core  
L3: 18 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 480 GB SATA SSD  
Other: CPU Cooling: Air

### Software

OS: Red Hat Enterprise Linux 9.5 (Plow)  
Kernel 5.14.0-503.11.1.el9\_5.x86\_64  
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: Yes  
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: 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    |             |             |            |             |             |             |
|-----------------|---------|-------------|-------------|------------|-------------|-------------|-------------|---------|-------------|-------------|------------|-------------|-------------|-------------|
|                 | Threads | Seconds     | Ratio       | Seconds    | Ratio       | Seconds     | Ratio       | Threads | Seconds     | Ratio       | Seconds    | Ratio       | Seconds     | Ratio       |
| 600.perlbench_s | 12      | 151         | 11.8        | 150        | 11.8        | <u>151</u>  | <u>11.8</u> | 12      | <u>134</u>  | <u>13.3</u> | 134        | 13.2        | 133         | 13.3        |
| 602.gcc_s       | 12      | <u>259</u>  | <u>15.4</u> | 260        | 15.3        | 259         | 15.4        | 12      | <u>244</u>  | <u>16.3</u> | 245        | 16.3        | 244         | 16.3        |
| 605.mcf_s       | 12      | 152         | 31.0        | 153        | 30.9        | <u>153</u>  | <u>30.9</u> | 12      | 152         | 31.0        | 153        | 30.9        | <u>153</u>  | <u>30.9</u> |
| 620.omnetpp_s   | 12      | <u>168</u>  | <u>9.73</u> | 168        | 9.73        | 168         | 9.73        | 12      | <u>168</u>  | <u>9.73</u> | 168        | 9.73        | 168         | 9.73        |
| 623.xalanchmk_s | 12      | 78.8        | 18.0        | 78.4       | 18.1        | <u>78.8</u> | <u>18.0</u> | 12      | 78.8        | 18.0        | 78.4       | 18.1        | <u>78.8</u> | <u>18.0</u> |
| 625.x264_s      | 12      | <u>60.1</u> | <u>29.3</u> | 60.1       | 29.4        | 60.3        | 29.2        | 12      | <u>56.8</u> | <u>31.0</u> | 56.9       | 31.0        | 56.8        | 31.1        |
| 631.deepsjeng_s | 12      | 155         | 9.23        | <u>155</u> | <u>9.22</u> | 156         | 9.21        | 12      | 155         | 9.23        | <u>155</u> | <u>9.22</u> | 156         | 9.21        |
| 641.leela_s     | 12      | 222         | 7.68        | 222        | 7.69        | <u>222</u>  | <u>7.68</u> | 12      | 222         | 7.68        | 222        | 7.69        | <u>222</u>  | <u>7.68</u> |
| 648.exchange2_s | 12      | <u>83.0</u> | <u>35.4</u> | 82.7       | 35.5        | 83.3        | 35.3        | 12      | <u>83.0</u> | <u>35.4</u> | 82.7       | 35.5        | 83.3        | 35.3        |
| 657.xz_s        | 12      | 417         | 14.8        | 418        | 14.8        | <u>418</u>  | <u>14.8</u> | 12      | 417         | 14.8        | 418        | 14.8        | <u>418</u>  | <u>14.8</u> |

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

## 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:

KMP\_AFFINITY = "granularity=fine,scatter"

LD\_LIBRARY\_PATH = "/home/cpu2017-1.1.9-ic2024.1/lib/intel64:/home/cpu2017-1.1.9-ic2024.1/je5.0.1-64"

MALLOC\_CONF = "retain:true"

OMP\_STACKSIZE = "192M"

## General Notes

Binaries compiled on a system with 2x Intel Xeon Platinum 8280M CPU + 384GB RAM

memory using Redhat Enterprise Linux 8.0

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

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>



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## Platform Notes

BIOS configuration:

Choose Operating Mode set to Custom Mode

CPU P-state Control set to Cooperative with Legacy

Sysinfo program /home/cpu2017-1.1.9-ic2024.1/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost.localdomain Thu Apr 17 18:11:22 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 252 (252-46.el9\_5.2)
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.localdomain 5.14.0-503.11.1.el9\_5.x86\_64 #1 SMP PREEMPT\_DYNAMIC Mon Sep 30 11:54:45 EDT 2024 x86\_64 x86\_64 x86\_64 GNU/Linux

2. w  
18:11:22 up 3 min, 0 users, load average: 0.03, 0.03, 0.00  
USER TTY LOGIN@ IDLE JCPU PCPU WHAT

3. Username  
From environment variable \$USER: root

4. ulimit -a  
real-time non-blocking time (microseconds, -R) unlimited  
core file size (blocks, -c) unlimited  
data seg size (kbytes, -d) unlimited  
scheduling priority (-e) 0  
file size (blocks, -f) unlimited  
pending signals (-i) 256698  
max locked memory (kbytes, -l) 8192

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## Platform Notes (Continued)

|                      |                 |           |
|----------------------|-----------------|-----------|
| 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)            | 256698    |
| virtual memory       | (kbytes, -v)    | unlimited |
| file locks           | (-x)            | unlimited |

```
-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize 31
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 Run345-compliant-ic2024.1-lin-core-avx2-speedint-smt-on-20240308.sh
runcpu --nobuild --action validate --define default-platform-flags -c
ic2024.1-lin-core-avx2-speed-20240308.cfg --define cores=6 --tune base,peak -o all --define
intspeedaffinity --define smt-on --define drop_caches intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
ic2024.1-lin-core-avx2-speed-20240308.cfg --define cores=6 --tune base,peak --output_format all --define
intspeedaffinity --define smt-on --define drop_caches --nopower --runmode speed --tune base:peak --size
refspeed intspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.685/temlogs/preenv.intspeed.685.0.log --lognum 685.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017-1.1.9-ic2024.1
-----
```

```
-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) 6333P
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       : 6
siblings        : 12
1 physical ids (chips)
12 processors (hardware threads)
physical id 0:  core ids 0-5
physical id 0:  apicids 0-11
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:       | 42 bits physical, 48 bits virtual |
| Byte Order:          | Little Endian                     |
| CPU(s):              | 12                                |
| On-line CPU(s) list: | 0-11                              |
| Vendor ID:           | GenuineIntel                      |
| BIOS Vendor ID:      | Intel(R) Corporation              |

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## Platform Notes (Continued)

Model name: Intel(R) Xeon(R) 6333P  
BIOS Model name: Intel(R) Xeon(R) 6333P  
CPU family: 6  
Model: 183  
Thread(s) per core: 2  
Core(s) per socket: 6  
Socket(s): 1  
Stepping: 1  
CPU(s) scaling MHz: 44%  
CPU max MHz: 5200.0000  
CPU min MHz: 800.0000  
BogoMIPS: 6220.80  
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 pdc\_m 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 avx\_vnni dtherm ida arat pln pts hwp hwp\_notify  
hwp\_act\_window hwp\_epp hwp\_pkg\_req 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: 288 KiB (6 instances)  
L1i cache: 192 KiB (6 instances)  
L2 cache: 12 MiB (6 instances)  
L3 cache: 18 MiB (1 instance)  
NUMA node(s): 1  
NUMA node0 CPU(s): 0-11  
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;  
PBR SB-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      | 288K     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 32K      | 192K     | 8    | Instruction | 1     | 64    | 1        | 64             |
| L2   | 2M       | 12M      | 16   | Unified     | 2     | 2048  | 1        | 64             |
| L3   | 18M      | 18M      | 9    | Unified     | 3     | 32768 | 1        | 64             |

8. numactl --hardware

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

available: 1 nodes (0)

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## Platform Notes (Continued)

```
node 0 cpus: 0-11
node 0 size: 64215 MB
node 0 free: 63636 MB
node distances:
node      0
0:      10
```

```
-----
9. /proc/meminfo
MemTotal:      65756220 kB
```

```
-----
10. who -r
run-level 3 Apr 17 18:08
```

```
-----
11. Systemd service manager version: systemd 252 (252-46.el9_5.2)
Default Target   Status
multi-user       running
```

```
-----
12. Services, from systemctl list-unit-files
STATE      UNIT FILES
enabled    NetworkManager NetworkManager-dispatcher NetworkManager-wait-online auditd chronyd crond
           dbus-broker firewalld getty@ insights-client-boot irqbalance kdump low-memory-monitor
           mdmonitor microcode nis-domainname rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark
           sshd sssd systemd-boot-update systemd-network-generator udisks2 upower
enabled-runtime
disabled    systemd-remount-fs
           canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot
           chrony-wait chronyd-restricted console-getty cpupower debug-shell dnf-system-upgrade
           kvm_stat man-db-restart-cache-update nftables pesign rdisc rhcd rhsm rhsm-facts
           rpmdb-rebuild selinux-check-proper-disable 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 systemd-sysupdate
           systemd-sysupdate-reboot
```

```
-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd4,gpt2)/boot/vmlinuz-5.14.0-503.11.1.el9_5.x86_64
root=UUID=ac8f2e4e-a15f-4475-ba58-5cea88b71de2
ro
resume=UUID=b1768a5a-be88-4ca4-8723-20387600340a
```

```
-----
14. cpupower frequency-info
analyzing CPU 7:
current policy: frequency should be within 800 MHz and 5.20 GHz.
                The governor "performance" may decide which speed to use
                within this range.

boost state support:
Supported: yes
Active: yes
```

```
-----
15. sysctl
kernel.numa_balancing      0
kernel.randomize_va_space  2
vm.compaction_proactiveness 20
vm.dirty_background_bytes   0
vm.dirty_background_ratio   10
```

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### Platform Notes (Continued)

```
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          Red Hat Enterprise Linux 9.5 (Plow)
redhat-release      Red Hat Enterprise Linux release 9.5 (Plow)
system-release      Red Hat Enterprise Linux release 9.5 (Plow)
```

```
-----
19. Disk information
SPEC is set to: /home/cpu2017-1.1.9-ic2024.1
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sdb4       xfs   361G   16G  346G   5% /home
```

```
-----
20. /sys/devices/virtual/dmi/id
Vendor:          Lenovo
Product:         ThinkSystem SR250 V3
Product Family:  ThinkSystem
Serial:          1234567890
```

```
-----
21. dmidecode
Additional information from dmidecode 3.6 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      | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
      | 657.xz_s(base, peak)
=====
```

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

```
=====
C++    | 620.omnetpp_s(base, peak) 623.xalancbmk_s(base, peak) 631.deepsjeng_s(base, peak)
      | 641.leela_s(base, peak)
=====
```

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

```
=====
Fortran | 648.exchange2_s(base, peak)
=====
```

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
Copyright (C) 1985-2024 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx



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## Base Portability Flags

600.perlbench\_s: -DSPEC\_LP64 -DSPEC\_LINUX\_X64  
602.gcc\_s: -DSPEC\_LP64  
605.mcf\_s: -DSPEC\_LP64  
620.omnetpp\_s: -DSPEC\_LP64  
623.xalancbmk\_s: -DSPEC\_LP64 -DSPEC\_LINUX  
625.x264\_s: -DSPEC\_LP64  
631.deepsjeng\_s: -DSPEC\_LP64  
641.leela\_s: -DSPEC\_LP64  
648.exchange2\_s: -DSPEC\_LP64  
657.xz\_s: -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 -fiopenmp  
-DSPEC\_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

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/usr/local/jemalloc64-5.0.1/lib -ljemalloc

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  
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx



# SPEC CPU®2017 Integer Speed Result

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Lenovo Global Technology

ThinkSystem SR250 V3  
(3.10 GHz, Intel Xeon 6333P)

SPECspeed®2017\_int\_base = 16.0

SPECspeed®2017\_int\_peak = 16.3

CPU2017 License: 9017

Test Sponsor: Lenovo Global Technology

Tested by: Lenovo Global Technology

Test Date: Apr-2025

Hardware Availability: Apr-2025

Software Availability: Nov-2024

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

```
600.perlbench_s: -w -m64 -std=c11 -Wl, -z,muldefs  
-fprofile-generate(pass 1)  
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2 -flto  
-Ofast(pass 1) -O3 -ffast-math -mfpmath=sse  
-funroll-loops -qopt-mem-layout-trans=4 -fiopenmp  
-DSPEC_OPENMP -fno-strict-overflow  
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

```
602.gcc_s: -w -m64 -std=c11 -Wl, -z,muldefs  
-fprofile-generate(pass 1)  
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2 -flto  
-Ofast(pass 1) -O3 -ffast-math -mfpmath=sse  
-funroll-loops -qopt-mem-layout-trans=4 -fiopenmp  
-DSPEC_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

605.mcf\_s: basepeak = yes

```
625.x264_s: -w -std=c11 -m64 -Wl, -z,muldefs -xCORE-AVX2 -O3  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP  
-fno-alias -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc
```

657.xz\_s: basepeak = yes

C++ benchmarks:

620.omnetpp\_s: basepeak = yes

623.xalancbmk\_s: basepeak = yes

631.deepsjeng\_s: basepeak = yes

641.leela\_s: basepeak = yes

Fortran benchmarks:

648.exchange2\_s: basepeak = yes



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**Software Availability:** Nov-2024

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-Catlow-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-Catlow-A.xml>

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

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