



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Dell Inc.

SPECspeed®2017\_int\_base = 13.7

PowerEdge R670 (Intel Xeon 6515P)

SPECspeed®2017\_int\_peak = 14.0

CPU2017 License: 6573

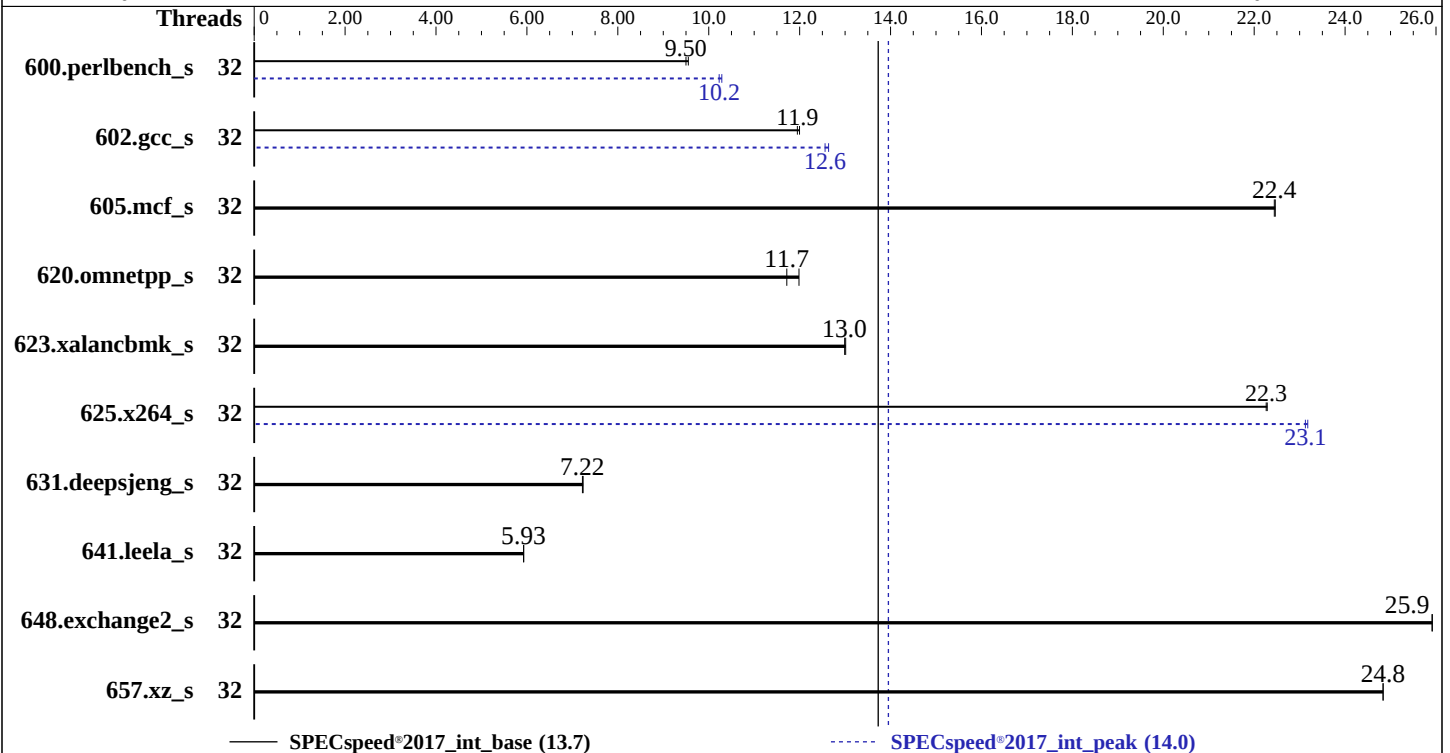
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Jul-2025

Hardware Availability: Apr-2025

Software Availability: Jun-2024



## Hardware

CPU Name: Intel Xeon 6515P  
Max MHz: 3800  
Nominal: 2300  
Enabled: 32 cores, 2 chips  
Orderable: 1,2 chips  
Cache L1: 64 KB I + 48 KB D on chip per core  
L2: 2 MB I+D on chip per core  
L3: 72 MB I+D on chip per chip  
Other: None  
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-6400B-R)  
Storage: 50 GB on tmpfs  
Other: CPU Cooling: DLC

## Software

OS: SUSE Linux Enterprise Server 15 SP6  
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: Yes  
Firmware: Version 1.3.2 released May-2025  
File System: tmpfs  
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 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 | 32      | <b><u>187</u></b>  | <b><u>9.50</u></b> | 186               | 9.55               |         |       | 32      | 173                | 10.3               | <b><u>174</u></b> | <b><u>10.2</u></b> |         |       |
| 602.gcc_s       | 32      | <b><u>333</u></b>  | <b><u>11.9</u></b> | 332               | 12.0               |         |       | 32      | <b><u>317</u></b>  | <b><u>12.6</u></b> | 315               | 12.6               |         |       |
| 605.mcf_s       | 32      | <b><u>210</u></b>  | <b><u>22.4</u></b> | 210               | 22.5               |         |       | 32      | <b><u>210</u></b>  | <b><u>22.4</u></b> | 210               | 22.5               |         |       |
| 620.omnetpp_s   | 32      | <b><u>139</u></b>  | <b><u>11.7</u></b> | 136               | 12.0               |         |       | 32      | <b><u>139</u></b>  | <b><u>11.7</u></b> | 136               | 12.0               |         |       |
| 623.xalancbmk_s | 32      | <b><u>109</u></b>  | <b><u>13.0</u></b> | 109               | 13.0               |         |       | 32      | <b><u>109</u></b>  | <b><u>13.0</u></b> | 109               | 13.0               |         |       |
| 625.x264_s      | 32      | <b><u>79.2</u></b> | <b><u>22.3</u></b> | 79.1              | 22.3               |         |       | 32      | <b><u>76.3</u></b> | <b><u>23.1</u></b> | 76.1              | 23.2               |         |       |
| 631.deepsjeng_s | 32      | 198                | 7.24               | <b><u>198</u></b> | <b><u>7.22</u></b> |         |       | 32      | 198                | 7.24               | <b><u>198</u></b> | <b><u>7.22</u></b> |         |       |
| 641.leela_s     | 32      | 288                | 5.93               | <b><u>288</u></b> | <b><u>5.93</u></b> |         |       | 32      | 288                | 5.93               | <b><u>288</u></b> | <b><u>5.93</u></b> |         |       |
| 648.exchange2_s | 32      | <b><u>113</u></b>  | <b><u>25.9</u></b> | 113               | 25.9               |         |       | 32      | <b><u>113</u></b>  | <b><u>25.9</u></b> | 113               | 25.9               |         |       |
| 657.xz_s        | 32      | 249                | 24.8               | <b><u>249</u></b> | <b><u>24.8</u></b> |         |       | 32      | 249                | 24.8               | <b><u>249</u></b> | <b><u>24.8</u></b> |         |       |

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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 =

"/mnt/ramdisk/cpu2017-1.1.9-ic2024.1/lib/intel64:/mnt/ramdisk/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

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>

Benchmark run from a 50 GB ramdisk created with the cmd: "mount -t tmpfs -o size=50G tmpfs /mnt/ramdisk"

## Platform Notes

BIOS Settings:

Logical Processor : Disabled

Sub NUMA Cluster : Enabled

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## Platform Notes (Continued)

MADT Core Enumeration : Linear  
LLC Prefetch : Enabled  
Optimizer Mode : Enabled

System Profile : Custom  
CPU Power Management : Maximum Performance  
Energy Efficient Turbo : Disabled  
C1E : Disabled  
C-States : Autonomous  
Latency Optimized Mode : Enabled  
Energy Efficient Policy : Performance  
CPU Interconnect Bus -  
Link Power Management : Disabled  
PCI ASPM L1 Link Power Management : Disabled  
DIMM Self Healing -  
on Uncorrectable Memory Error : Disabled

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2024.1/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on 1234567-R670 Fri Jul 11 19:06:37 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 1234567-R670 6.4.0-150600.21-default #1 SMP PREEMPT\_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09/lp)  
x86\_64 x86\_64 x86\_64 GNU/Linux

2. w  
19:06:37 up 3 min, 1 user, load average: 0.24, 0.29, 0.13  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 - 19:04 42.00s 0.82s 0.00s /bin/bash

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## Platform Notes (Continued)

```
/home/DellFiles/bin/Intel/dell-run-speccpu.sh speed --define DL-VERS=6.3 --output_format html, pdf, txt
```

### 3. Username

From environment variable \$USER: root

### 4. ulimit -a

```
core file size          (blocks, -c) unlimited
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 2062315
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) 2062315
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

### 5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
login -- root
-bash
/bin/bash /home/DellFiles/bin/DELL_speed.sh
/bin/bash /home/DellFiles/bin/dell-run-main.sh speed
/bin/bash /home/DellFiles/bin/dell-run-main.sh speed
/bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh speed --define DL-VERS=6.3 --output_format
html, pdf, txt
/bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh speed --define DL-VERS=6.3 --output_format
html, pdf, txt
runcpu --nobuild --action validate --define default-platform-flags -c
ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=32 --tune base,peak -o all --define
intspeedaffinity --define drop_caches --iterations 2 --define DL-VERS=6.3 --output_format html, pdf, txt
intspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
ic2024.1-lin-sapphirerapids-speed-20240308.cfg --define cores=32 --tune base,peak --output_format all
--define intsppedaffinity --define drop_caches --iterations 2 --define DL-VERS=6.3 --output_format
html, pdf, txt --nopower --runmode speed --tune base:peak --size refspped intspped --nopreenv --note-preenv
--logfile $SPEC/tmp/CPU2017.001/temlogs/preenv.intspped.001.0.log --lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-ic2024.1
```

### 6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6515P
vendor_id       : GenuineIntel
cpu family      : 6
model           : 173
stepping        : 1
microcode       : 0x10003c2
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores       : 16
siblings        : 16
```

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## Platform Notes (Continued)

2 physical ids (chips)  
32 processors (hardware threads)  
physical id 0: core ids 0-15  
physical id 1: core ids 0-15  
physical id 0: apicids 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30  
physical id 1: apicids 128,130,132,134,136,138,140,142,144,146,148,150,152,154,156,158

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:                      | 52 bits physical, 57 bits virtual                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Byte Order:                         | Little Endian                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| CPU(s):                             | 32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| On-line CPU(s) list:                | 0-31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Vendor ID:                          | GenuineIntel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| BIOS Vendor ID:                     | Intel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Model name:                         | Intel(R) Xeon(R) 6515P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| BIOS Model name:                    | Intel(R) Xeon(R) 6515P CPU @ 2.3GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| BIOS CPU family:                    | 179                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| CPU family:                         | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Model:                              | 173                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Thread(s) per core:                 | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Core(s) per socket:                 | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Socket(s):                          | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Stepping:                           | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| BogoMIPS:                           | 4600.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Flags:                              | fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat<br>pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx<br>pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good<br>nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni<br>pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16<br>xtpr pdc_m pcid dca sse4_1 sse4_2 x2apic movbe popcnt<br>tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm<br>3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3 intel_ppin cdp_l2<br>ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept<br>vpid ept_ad fsgsbase tsc_adjust bmi1 hle avx2 smep bmi2 erms invpcid<br>rtm cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt<br>clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec<br>xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local<br>split_lock_detect user_shstk avx_vnni avx512_bf16 wbnoinvd dtherm ida<br>arat pln pts vnmi avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni<br>vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57<br>rdpid bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear<br>serialize tsxldtrk pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile<br>amx_int8 flush_l1d arch_capabilities |
| Virtualization:                     | VT-x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| L1d cache:                          | 1.5 MiB (32 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| L1i cache:                          | 2 MiB (32 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| L2 cache:                           | 64 MiB (32 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| L3 cache:                           | 144 MiB (2 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| NUMA node(s):                       | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NUMA node0 CPU(s):                  | 0-15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| NUMA node1 CPU(s):                  | 16-31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Vulnerability Gather data sampling: | Not affected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Vulnerability Itlb multihit:        | Not affected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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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 Not affected; 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      | 1.5M     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 64K      | 2M       | 16   | Instruction | 1     | 64    | 1        | 64             |
| L2   | 2M       | 64M      | 16   | Unified     | 2     | 2048  | 1        | 64             |
| L3   | 72M      | 144M     | 16   | Unified     | 3     | 73728 | 1        | 64             |

8. numactl --hardware

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

available: 2 nodes (0-1)  
node 0 cpus: 0-15  
node 0 size: 257655 MB  
node 0 free: 256276 MB  
node 1 cpus: 16-31  
node 1 size: 257992 MB  
node 1 free: 247420 MB  
node distances:  
node 0 1  
0: 10 21  
1: 21 10

9. /proc/meminfo

MemTotal: 528024448 kB

10. who -r

run-level 3 Jul 11 19:03

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         | ModemManager YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd cron display-manager firewalld getty@ irqbalance issue-generator kbdsettings klog lvm2-monitor nsd nvme-fc-boot-connections nvme-autoconnect postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny wpa_supplicant |
| enabled-runtime | systemd-remount-fs                                                                                                                                                                                                                                                                                                                                                                |
| disabled        | NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon autofs autovast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait chronyd                                                                                                                                                                                                  |

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Hardware Availability: Apr-2025

Software Availability: Jun-2024

## Platform Notes (Continued)

indirect  
console-getty cups cups-browsed debug-shell dmraid-activation dnsmasq ebttables  
exchange-bmc-os-info fsidd gpm grub2-once haveged hwloc-dump-hwdata ipmi ipmiev  
issue-add-ssh-keys kexec-load ksm kvm\_stat lunmask man-db-create multipathd nfs nfs-blkmap  
nmb openvpn@ ostree-remount rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@  
smartd\_generate\_opts smb snmpd snmptrapd speech-dispatcherd systemd-boot-check-no-failures  
systemd-confext systemd-network-generator systemd-sysextd systemd-time-wait-sync  
systemd-timesyncd udisks2 update-system-flatpaks upower vncserver@ wpa\_supplicant@  
pcscd saned@ systemd-userdbd wickedd

-----  
13. Linux kernel boot-time arguments, from /proc/cmdline  
BOOT\_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default  
root=UUID=f6b7b82f-7376-4741-aad6-a16a8014b2fb  
splash=silent  
resume=/dev/disk/by-uuid/3bfae0e2-56ee-4845-bdbe-561ecf485c49  
mitigations=auto  
quiet  
security=apparmor

-----  
14. cpupower frequency-info  
analyzing CPU 26:  
Unable to determine current policy  
boost state support:  
Supported: yes  
Active: yes

-----  
15. 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

-----  
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

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# SPEC CPU®2017 Integer Speed Result

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Dell Inc.

SPECspeed®2017\_int\_base = 13.7

PowerEdge R670 (Intel Xeon 6515P)

SPECspeed®2017\_int\_peak = 14.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Jul-2025

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## Platform Notes (Continued)

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: /mnt/ramdisk/cpu2017-1.1.9-ic2024.1  
Filesystem Type Size Used Avail Use% Mounted on  
tmpfs tmpfs 50G 5.0G 46G 10% /mnt/ramdisk

### 20. /sys/devices/virtual/dmi/id

Vendor: Dell Inc.  
Product: PowerEdge R670  
Product Family: PowerEdge  
Serial: 1234567

### 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:  
3x 002C069D002C MTC20F2085S1RC64BD1 USFF 32 GB 2 rank 6400  
2x 00AD063200AD HMC688AHBRA292N 32 GB 2 rank 6400  
11x 00CE063200CE M321R4GA3PB1-CCPPC 32 GB 2 rank 6400

### 22. BIOS

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

BIOS Vendor: Dell Inc.  
BIOS Version: 1.3.2  
BIOS Date: 05/15/2025  
BIOS Revision: 1.3

## 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  
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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

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Test Date: Jul-2025

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Software Availability: Jun-2024

## Compiler Version Notes (Continued)

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  
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## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

## 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 -xsapphirerapids -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 -xsapphirerapids -O3 -ffast-math

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# SPEC CPU®2017 Integer Speed Result

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CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Jul-2025

Hardware Availability: Apr-2025

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## Base Optimization Flags (Continued)

C++ benchmarks (continued):

-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 -xsapfirerapids -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

## 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(pass 1)  
-flto -Ofast(pass 1) -xCORE-AVX512 -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(pass 1)

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# SPEC CPU®2017 Integer Speed Result

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SPECspeed®2017\_int\_peak = 14.0

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Jul-2025

Hardware Availability: Apr-2025

Software Availability: Jun-2024

## Peak Optimization Flags (Continued)

602.gcc\_s (continued):

```
-flto -Ofast(pass 1) -xCORE-AVX512 -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 -xsapphirerapids -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

The flags files that were used to format this result can be browsed at

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

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.13.html>

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

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

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.13.xml>

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