



# SPEC CPU®2017 Integer Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

New H3C Technologies Co., Ltd.

SPECrate®2017\_int\_base = 217

H3C UniServer R4900 G7 (Intel Xeon 6507P)

SPECrate®2017\_int\_peak = 223

CPU2017 License: 9066

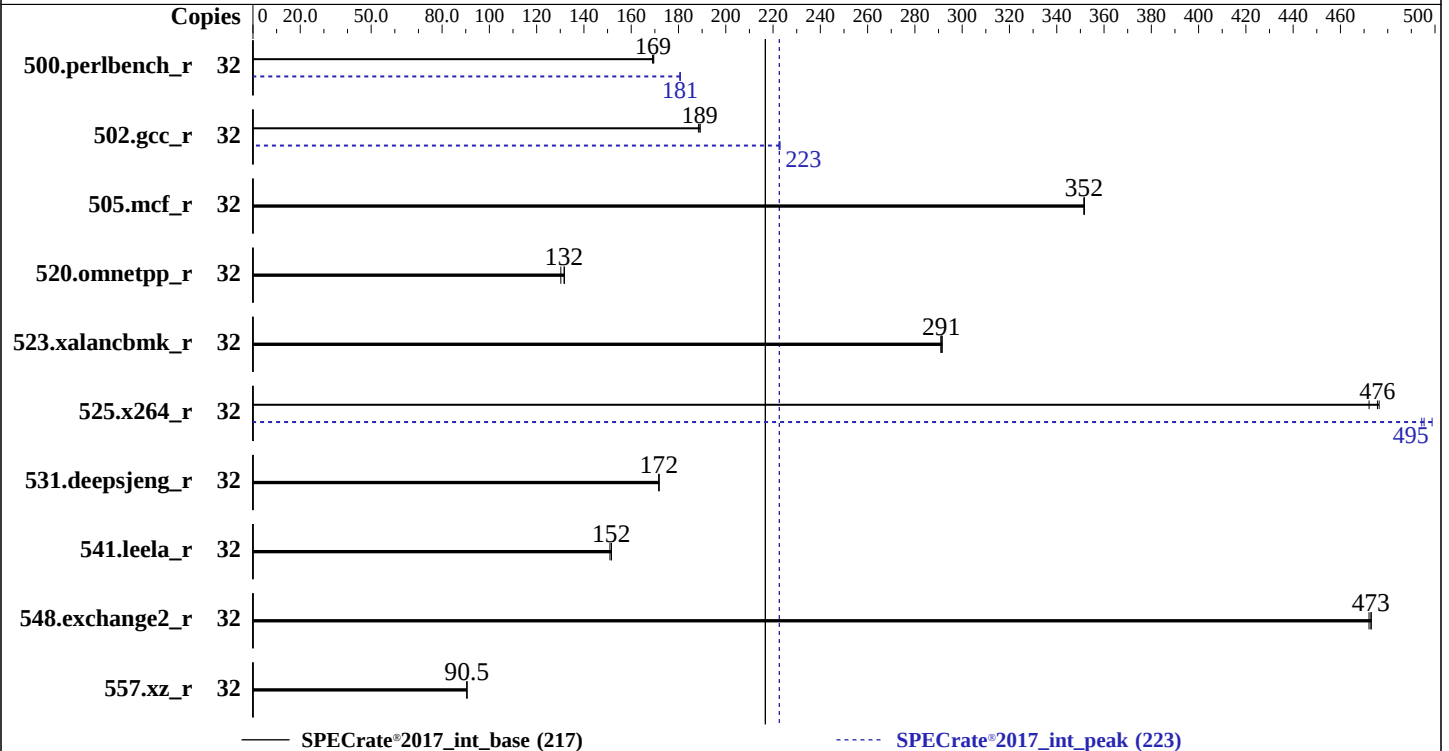
Test Sponsor: New H3C Technologies Co., Ltd.

Tested by: New H3C Technologies Co., Ltd.

Test Date: Dec-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2025



## Hardware

CPU Name: Intel Xeon 6507P  
Max MHz: 4300  
Nominal: 3500  
Enabled: 16 cores, 2 chips, 2 threads/core  
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: 48 MB I+D on chip per chip  
Other: None  
Memory: 512 GB (16 x 32 GB 2Rx8 PC5-6400B-R)  
Storage: 1 x 960 GB SATA SSD  
Other: CPU Cooling: Air

## Software

OS: SUSE Linux Enterprise Server 15 SP7  
6.4.0-150700.51-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: Version 7.00.19 released Sep-2025 BIOS  
File System: btrfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other: jemalloc memory allocator V5.0.1  
Power Management: BIOS and OS set to prefer performance at the cost  
of additional power usage.



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## Results Table

| Benchmark       | Base   |                   |                   |                   |                   |                   |                    | Peak   |                   |                   |                   |                   |                   |                    |
|-----------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
|                 | Copies | Seconds           | Ratio             | Seconds           | Ratio             | Seconds           | Ratio              | Copies | Seconds           | Ratio             | Seconds           | Ratio             | Seconds           | Ratio              |
| 500.perlbench_r | 32     | 301               | 169               | <b><u>301</u></b> | <b><u>169</u></b> | 300               | 170                | 32     | 282               | 181               | 282               | 181               | <b><u>282</u></b> | <b><u>181</u></b>  |
| 502.gcc_r       | 32     | 240               | 189               | 240               | 188               | <b><u>240</u></b> | <b><u>189</u></b>  | 32     | 203               | 223               | <b><u>203</u></b> | <b><u>223</u></b> | 204               | 223                |
| 505.mcf_r       | 32     | 147               | 352               | 147               | 352               | <b><u>147</u></b> | <b><u>352</u></b>  | 32     | 147               | 352               | 147               | 352               | <b><u>147</u></b> | <b><u>352</u></b>  |
| 520.omnetpp_r   | 32     | <b><u>319</u></b> | <b><u>132</u></b> | 322               | 130               | 319               | 132                | 32     | <b><u>319</u></b> | <b><u>132</u></b> | 322               | 130               | 319               | 132                |
| 523.xalancbmk_r | 32     | <b><u>116</u></b> | <b><u>291</u></b> | 116               | 291               | 116               | 292                | 32     | <b><u>116</u></b> | <b><u>291</u></b> | 116               | 291               | 116               | 292                |
| 525.x264_r      | 32     | 119               | 472               | 118               | 476               | <b><u>118</u></b> | <b><u>476</u></b>  | 32     | <b><u>113</u></b> | <b><u>495</u></b> | 112               | 499               | 113               | 494                |
| 531.deepsjeng_r | 32     | 213               | 172               | 214               | 172               | <b><u>214</u></b> | <b><u>172</u></b>  | 32     | 213               | 172               | 214               | 172               | <b><u>214</u></b> | <b><u>172</u></b>  |
| 541.leela_r     | 32     | <b><u>350</u></b> | <b><u>152</u></b> | 351               | 151               | 349               | 152                | 32     | <b><u>350</u></b> | <b><u>152</u></b> | 351               | 151               | 349               | 152                |
| 548.exchange2_r | 32     | <b><u>177</u></b> | <b><u>473</u></b> | 178               | 472               | 177               | 473                | 32     | <b><u>177</u></b> | <b><u>473</u></b> | 178               | 472               | 177               | 473                |
| 557.xz_r        | 32     | 382               | 90.5              | 382               | 90.5              | <b><u>382</u></b> | <b><u>90.5</u></b> | 32     | 382               | 90.5              | 382               | 90.5              | <b><u>382</u></b> | <b><u>90.5</u></b> |

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

## Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/home/speccpu/lib/intel64:/home/speccpu/lib/ia32:/home/speccpu/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  
runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <etc>  
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.  
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.  
jemalloc, a general purpose malloc implementation

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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 Settings:

SNC = Enable  
ACPI C6x Enumeration = C6 as ACPI C2  
DCU Streamer Prefetcher = Disable

### BMC Settings:

Fan mode = powerful mode

Sysinfo program /home/speccpu/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost Wed Dec 31 17:24:23 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 (254.24+suse.148.g83b9060b6e)
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 6.4.0-150700.51-default #1 SMP PREEMPT\_DYNAMIC Wed Apr 30 21:35:43 UTC 2025 (6930611/lp)  
x86\_64 x86\_64 x86\_64 GNU/Linux

2. w  
17:24:23 up 2:30, 1 user, load average: 0.00, 0.00, 0.69  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 - 15:00 7.00s 1.10s 0.01s -bash

3. Username  
From environment variable \$USER: root

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## Platform Notes (Continued)

```
-----
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) 2062162
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) 2062162
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
-bash
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=32 -c
ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=16 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak -o all intrate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=32 --configfile
ic2024.1-lin-sapphirerapids-rate-20240308.cfg --define smt-on --define cores=16 --define physicalfirst
--define invoke_with_interleave --define drop_caches --tune base,peak --output_format all --nopower
--runmode rate --tune base:peak --size refrate intrate --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.168/temlogs/preenv.intrate.168.0.log --lognum 168.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/speccpu
-----
```

```
-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) 6507P
vendor_id      : GenuineIntel
cpu family     : 6
model          : 173
stepping       : 1
microcode      : 0x10003d0
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores      : 8
siblings       : 16
2 physical ids (chips)
32 processors (hardware threads)
physical id 0: core ids 0-7
physical id 1: core ids 0-7
physical id 0: apicids 0-15
physical id 1: apicids 128-143
Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for
virtualized systems. Use the above data carefully.
-----
```

```
7. lscpu
```

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## Platform Notes (Continued)

From lscpu from util-linux 2.40.4:

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Model name:                           | Intel(R) Xeon(R) 6507P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| CPU family:                           | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Model:                                | 173                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Thread(s) per core:                   | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Core(s) per socket:                   | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Socket(s):                            | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Stepping:                             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| CPU(s) scaling MHz:                   | 41%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| CPU max MHz:                          | 4300.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CPU min MHz:                          | 800.0000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| BogoMIPS:                             | 7000.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Flags:                                | fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtscp lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid aperfmperf tsc_known_freq pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16 xtpr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes xsave avx f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cat_l2 cdp_l3 intel_ppin cdp_l2 ssbd mba ibrs ibpb stibp ibrs_enhanced tpr_shadow flexpriority ept vpid ept_ad fsgsbase tsc_adjust bmi1 avx2 smep bmi2 erms invpcid cqm rdt_a avx512f avx512dq rdseed adx smap avx512ifma clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt xsavec xgetbv1 xsaves cqm_llc cqm_occup_llc cqm_mbm_total cqm_mbm_local split_lock_detect user_shstk avx_vnni avx512_bf16 wbnoinvd dtherm ida arat pln pts hwp hwp_act_window hwp_epp hwp_pkg_req vnmi avx512vbmi umip pku ospke waitpkg avx512_vbmi2 gfni vaes vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpopcntdq la57 rdpid bus_lock_detect cldemote movdiri movdir64b enqcmd fsrm md_clear serialize tsxldtrk pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile amx_int8 flush_l1d arch_capabilities |
| Virtualization:                       | VT-x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| L1d cache:                            | 768 KiB (16 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| L1i cache:                            | 1 MiB (16 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| L2 cache:                             | 32 MiB (16 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| L3 cache:                             | 96 MiB (2 instances)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| NUMA node(s):                         | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| NUMA node0 CPU(s):                    | 0-7,16-23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NUMA node1 CPU(s):                    | 8-15,24-31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 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 Not affected; BHI BHI_DIS_S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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## Platform Notes (Continued)

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      | 768K     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 64K      | 1M       | 16   | Instruction | 1     | 64    | 1        | 64             |
| L2   | 2M       | 32M      | 16   | Unified     | 2     | 2048  | 1        | 64             |
| L3   | 48M      | 96M      | 16   | Unified     | 3     | 49152 | 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: 0-7,16-23
node 0 size: 257542 MB
node 0 free: 249373 MB
node 1 cpus: 8-15,24-31
node 1 size: 258028 MB
node 1 free: 253809 MB
node distances:
node  0  1
 0:  10  21
 1:  21  10
```

9. /proc/meminfo

MemTotal: 527944188 kB

10. who -r

run-level 3 Dec 31 14:54

11. Systemd service manager version: systemd 254 (254.24+suse.148.g83b9060b6e)

| 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 bluetooth cron display-manager getty@ irqbalance issue-generator kbdsettings klog lvm2-monitor nscd 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 autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd console-getty cups cups-browsed debug-shell dmraid-activation dnsmasq ebttables exchange-bmc-os-info firewalld fsidd gnome-remote-desktop gpm grub2-once haveged ipmi ipmievd issue-add-ssh-keys kexec-load ksm kvm_stat lunmask man-db-create multipathd nfs nfs-blkmap nmb openvpn@ ostree-remount ostree-state-overlay@ rpcbind rpmconfigcheck rsyncd rtkit-daemon samba-bgqd 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@ |
| indirect        | pcscd saned@ systemd-userdbd wickedd                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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

(Continued on next page)



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Hardware Availability: Mar-2025

Software Availability: Jun-2025

## Platform Notes (Continued)

```
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.51-default
root=UUID=caa76791-ac18-477b-958c-517956aed673
splash=silent
mitigations=auto
quiet
security=apparmor
```

### 14. cpupower frequency-info

analyzing CPU 28:

current policy: frequency should be within 800 MHz and 4.30 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      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
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 SP7

(Continued on next page)



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## Platform Notes (Continued)

### 19. Disk information

SPEC is set to: /home/speccpu

| Filesystem | Type  | Size | Used | Avail | Use% | Mounted on |
|------------|-------|------|------|-------|------|------------|
| /dev/sda2  | btrfs | 892G | 421G | 472G  | 48%  | /home      |

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

Vendor: New H3C Technologies Co., Ltd.  
Product: H3C UniServer R4900 G7  
Product Family: Rack  
Serial: 210235A51GH249000019

### 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:

10x Hynix HMC88AHBRA290N 32 GB 2 rank 6400  
1x Hynix HMC88AHBRA472N 32 GB 2 rank 6400  
5x Hynix HMC88AHBRA478N 32 GB 2 rank 6400

### 22. BIOS

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

BIOS Vendor: American Megatrends International, LLC.  
BIOS Version: 7.00.19  
BIOS Date: 09/26/2025  
BIOS Revision: 5.35  
Firmware Revision: 2.8

## 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)

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 | 502.gcc\_r(peak)

Intel(R) oneAPI DPC++/C++ Compiler for applications running on IA-32, Version 2024.1.0 Build 20240308  
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(Continued on next page)



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Test Date: Dec-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2025

## Compiler Version Notes (Continued)

```
=====
C      | 500.perlbench_r(base, peak) 502.gcc_r(base) 505.mcf_r(base, peak) 525.x264_r(base, peak)
      | 557.xz_r(base, peak)
=====
```

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

```
=====
Fortran | 548.exchange2_r(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

```
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
```



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Software Availability: Jun-2025

## Base Optimization Flags

C benchmarks:

-w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmallo

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmallo

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xsapphirerapids -O3 -ffast-math -flto  
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-nostandard-realloc-lhs -align array32byte -auto  
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmallo

## 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



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Hardware Availability: Mar-2025

Software Availability: Jun-2025

## Peak Optimization Flags

C benchmarks:

```
500.perlbench_r: -w -std=c11 -m64 -Wl,-z,muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-fno-strict-overflow
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmallocc

502.gcc_r: -m32 -L/opt/intel/oneapi/compiler/2024.1/lib32 -std=gnu89
-Wl,-z,muldefs -fprofile-generate(pass 1)
-fprofile-use=default.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4
-L/usr/local/jemalloc32-5.0.1/lib -ljemalloc

505.mcf_r: basepeak = yes

525.x264_r: -w -std=c11 -m64 -Wl,-z,muldefs -xsapphirerapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fno-alias
-L/opt/intel/oneapi/compiler/2024.1/lib -lqkmallocc

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/Intel-ic2024-official-linux64.html>

[http://www.spec.org/cpu2017/flags/New\\_H3C-Platform-Settings-Intel-GNR-RevC.html](http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-Intel-GNR-RevC.html)



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**Software Availability:** Jun-2025

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/New\\_H3C-Platform-Settings-Intel-GNR-RevC.xml](http://www.spec.org/cpu2017/flags/New_H3C-Platform-Settings-Intel-GNR-RevC.xml)

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