



# SPEC CPU®2017 Integer Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Supermicro

SuperServer SYS-122HA-TN-LCC  
(X14DBM-APL , Intel Xeon 6980P)

SPECspeed®2017\_int\_base = 13.5

SPECspeed®2017\_int\_peak = 13.6

CPU2017 License: 001176

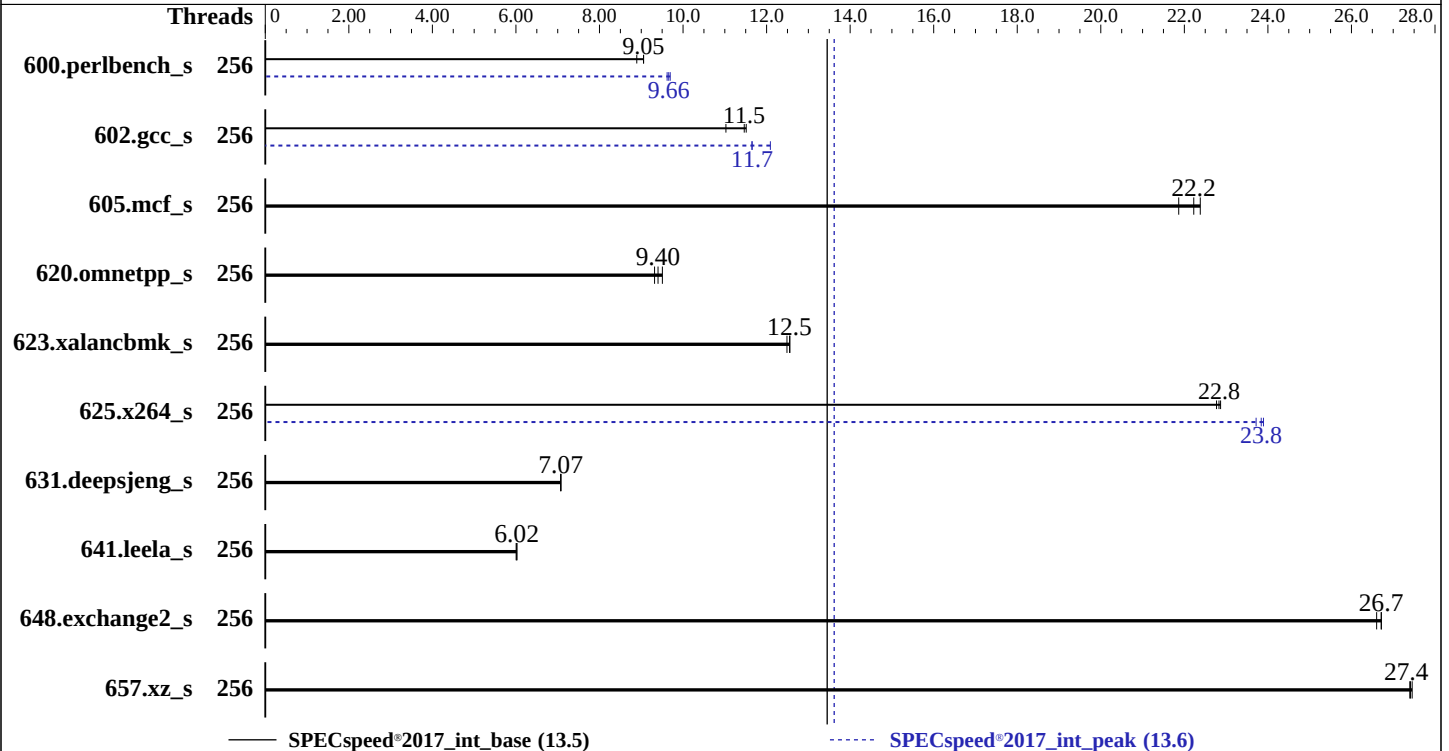
Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2024

Hardware Availability: Nov-2024

Software Availability: Jun-2024



### Hardware

CPU Name: Intel Xeon 6980P  
Max MHz: 3900  
Nominal: 2000  
Enabled: 256 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: 504 MB I+D on chip per chip  
Other: None  
Memory: 1536 GB (24 x 64 GB 2Rx4 PC5-88/56B-M)  
Storage: 1 x 1.6TB NVMe SSD  
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 1.1 released Nov-2024  
File System: btrfs  
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  | 256     | 200        | 8.89        | 196        | 9.06        | <b>196</b>  | <b>9.05</b> | 256     | <b>184</b>  | <b>9.66</b> | 185        | 9.62        | 183        | 9.69        |
| 602.gcc_s        | 256     | <b>347</b> | <b>11.5</b> | 346        | 11.5        | 361         | 11.0        | 256     | <b>342</b>  | <b>11.7</b> | 329        | 12.1        | 342        | 11.6        |
| 605.mcf_s        | 256     | <b>212</b> | <b>22.2</b> | 216        | 21.9        | 211         | 22.4        | 256     | <b>212</b>  | <b>22.2</b> | 216        | 21.9        | 211        | 22.4        |
| 620.omnetpp_s    | 256     | <b>173</b> | <b>9.40</b> | 172        | 9.51        | 175         | 9.32        | 256     | <b>173</b>  | <b>9.40</b> | 172        | 9.51        | 175        | 9.32        |
| 623.xalanchbmk_s | 256     | 113        | 12.6        | <b>113</b> | <b>12.5</b> | 113         | 12.5        | 256     | 113         | 12.6        | <b>113</b> | <b>12.5</b> | 113        | 12.5        |
| 625.x264_s       | 256     | 77.5       | 22.8        | 77.1       | 22.9        | <b>77.3</b> | <b>22.8</b> | 256     | <b>74.0</b> | <b>23.8</b> | 74.4       | 23.7        | 73.8       | 23.9        |
| 631.deepsjeng_s  | 256     | 203        | 7.08        | <b>203</b> | <b>7.07</b> | 203         | 7.07        | 256     | 203         | 7.08        | <b>203</b> | <b>7.07</b> | 203        | 7.07        |
| 641.leela_s      | 256     | 283        | 6.02        | 284        | 6.00        | <b>283</b>  | <b>6.02</b> | 256     | 283         | 6.02        | 284        | 6.00        | <b>283</b> | <b>6.02</b> |
| 648.exchange2_s  | 256     | 110        | 26.7        | 111        | 26.6        | <b>110</b>  | <b>26.7</b> | 256     | 110         | 26.7        | 111        | 26.6        | <b>110</b> | <b>26.7</b> |
| 657.xz_s         | 256     | <b>225</b> | <b>27.4</b> | 225        | 27.5        | 226         | 27.4        | 256     | <b>225</b>  | <b>27.4</b> | 225        | 27.5        | 226        | 27.4        |

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

## Operating System Notes

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

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:

KMP\_AFFINITY = "granularity=fine,scatter"

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

MALLOC\_CONF = "retain:true"

OMP\_STACKSIZE = "192M"

## General Notes

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

memory using Redhat Enterprise Linux 8.0

Transparent Huge Pages enabled by default

Prior to runcpu invocation

Filesystem page cache synced and cleared with:

sync; echo 3> /proc/sys/vm/drop\_caches

NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown)

is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1)

is mitigated in the system as tested and documented.

Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2)

is mitigated in the system as tested and documented.

jemalloc, a general purpose malloc implementation

built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

sources available from jemalloc.net or <https://github.com/jemalloc/jemalloc/releases>



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## Platform Notes

### BIOS Settings:

Power Performance Tuning = BIOS Controls EPB  
ENERGY\_PERF\_BIAS\_CFG mode = Extreme Performance  
Hyper-Threading [ALL] = Disable

Sysinfo program /home/cpu2017/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on 161-83 Thu Dec 12 14:58:06 2024

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. Failed units, from systemctl list-units --state=failed
13. Services, from systemctl list-unit-files
14. Linux kernel boot-time arguments, from /proc/cmdline
15. cpupower frequency-info
16. sysctl
17. /sys/kernel/mm/transparent\_hugepage
18. /sys/kernel/mm/transparent\_hugepage/khugepaged
19. OS release
20. Disk information
21. /sys/devices/virtual/dmi/id
22. dmidecode
23. BIOS

1. uname -a  
Linux 161-83 6.4.0-150600.21-default #1 SMP PREEMPT\_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09) x86\_64  
x86\_64 x86\_64 GNU/Linux

2. w  
14:58:06 up 4 min, 1 user, load average: 0.13, 0.45, 0.24  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty2 - 14:55 6.00s 1.72s 0.01s -bash

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

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### Platform Notes (Continued)

```
pending signals          (-i) 6188861
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) 6188861
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 -c
ic2024.1-lin-core-avx512-speed-20240308.cfg --define cores=256 --tune base,peak -o all --define
intspeedaffinity --define drop_caches intspeer
runcpu --nobuild --action validate --define default-platform-flags --configfile
ic2024.1-lin-core-avx512-speed-20240308.cfg --define cores=256 --tune base,peak --output_format all
--define intspeeraffinity --define drop_caches --nopower --runmode speed --tune base:peak --size refspeer
intspeer --nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.001/templogs/preenv.intspeer.001.0.log
--lognum 001.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

#### 6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6980P
vendor_id       : GenuineIntel
cpu family      : 6
model           : 173
stepping        : 1
microcode       : 0x1000314
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores       : 128
siblings        : 128
2 physical ids (chips)
256 processors (hardware threads)
physical id 0: core ids 0-42,64-106,128-169
physical id 1: core ids 0-42,64-105,128-170
physical id 0: apicids
0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72
, 74, 76, 78, 80, 82, 84, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 17
0, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 256, 258, 260, 262, 264
, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316,
318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338
physical id 1: apicids
512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 5
64, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 640, 642, 644, 646, 648, 650, 652, 654, 656, 65
8, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710
, 712, 714, 716, 718, 720, 722, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806,
808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852
```

Caution: /proc/cpuinfo data regarding chips, cores, and threads is not necessarily reliable, especially for virtualized systems. Use the above data carefully.

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## Platform Notes (Continued)

### 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):                      256
On-line CPU(s) list:         0-255
Vendor ID:                   GenuineIntel
BIOS Vendor ID:              Intel(R) Corporation
Model name:                  Intel(R) Xeon(R) 6980P
BIOS Model name:             Intel(R) Xeon(R) 6980P   CPU @ 2.0GHz
BIOS CPU family:             179
CPU family:                  6
Model:                       173
Thread(s) per core:         1
Core(s) per socket:         128
Socket(s):                   2
Stepping:                    1
CPU(s) scaling MHz:         21%
CPU max MHz:                 3900.0000
CPU min MHz:                 800.0000
BogoMIPS:                    4000.00
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 hle avx2 smep bmi2 erms invpcid
                             rtm 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 vnni 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:                   12 MiB (256 instances)
L1i cache:                   16 MiB (256 instances)
L2 cache:                    512 MiB (256 instances)
L3 cache:                    1008 MiB (2 instances)
NUMA node(s):                6
NUMA node0 CPU(s):           0-42
NUMA node1 CPU(s):           43-85
NUMA node2 CPU(s):           86-127
NUMA node3 CPU(s):           128-170
NUMA node4 CPU(s):           171-212
NUMA node5 CPU(s):           213-255
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit:   Not affected
Vulnerability L1tf:           Not affected
```

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### Platform Notes (Continued)

|                                       |                                                                                                               |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------|
| 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/swaps 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      | 12M      | 12   | Data        | 1     | 64     | 1        | 64             |
| L1i  | 64K      | 16M      | 16   | Instruction | 1     | 64     | 1        | 64             |
| L2   | 2M       | 512M     | 16   | Unified     | 2     | 2048   | 1        | 64             |
| L3   | 504M     | 1008M    | 16   | Unified     | 3     | 516096 | 1        | 64             |

8. numactl --hardware

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

available: 6 nodes (0-5)

node 0 cpus: 0-42

node 0 size: 257545 MB

node 0 free: 256643 MB

node 1 cpus: 43-85

node 1 size: 258036 MB

node 1 free: 257284 MB

node 2 cpus: 86-127

node 2 size: 258036 MB

node 2 free: 257384 MB

node 3 cpus: 128-170

node 3 size: 258036 MB

node 3 free: 257016 MB

node 4 cpus: 171-212

node 4 size: 257998 MB

node 4 free: 257458 MB

node 5 cpus: 213-255

node 5 size: 257590 MB

node 5 free: 257057 MB

node distances:

|      |    |    |    |    |    |    |
|------|----|----|----|----|----|----|
| node | 0  | 1  | 2  | 3  | 4  | 5  |
| 0:   | 10 | 12 | 12 | 21 | 21 | 21 |
| 1:   | 12 | 10 | 12 | 21 | 21 | 21 |
| 2:   | 12 | 12 | 10 | 21 | 21 | 21 |
| 3:   | 21 | 21 | 21 | 10 | 12 | 12 |
| 4:   | 21 | 21 | 21 | 12 | 10 | 12 |
| 5:   | 21 | 21 | 21 | 12 | 12 | 10 |

9. /proc/meminfo

MemTotal: 1584378428 kB

10. who -r

run-level 3 Dec 12 14:55 last=5

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### Platform Notes (Continued)

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

Default Target Status  
graphical degraded

12. Failed units, from systemctl list-units --state=failed

| UNIT              | LOAD   | ACTIVE | SUB    | DESCRIPTION  |
|-------------------|--------|--------|--------|--------------|
| * udisks2.service | loaded | failed | failed | Disk Manager |

13. Services, from systemctl list-unit-files

| STATE           | UNIT FILES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enabled         | YaST2-Firstboot YaST2-Second-Stage apparmor appstream-sync-cache auditd bluetooth cron display-manager firewalld getty@ irqbalance issue-generator kbdsettings kdump kdump-early kdump-notify klog lvm2-monitor nscd nvme-fc-boot-connections nvme-fc-autoconnect postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny                                                                                                                                                                                                                                                        |
| enabled-runtime | systemd-remount-fs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| disabled        | accounts-daemon autofs autoyast-initscripts blk-availability bluetooth-mesh boot-sysctl ca-certificates chrony-wait chronyd console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info fsidd gpm grub2-once haveged ipmi ipmievdev issue-add-ssh-keys kexec-load lunmask man-db-create multipathd nfs nfs-blkmap nmb ostree-remount rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@ smartd-generate-opts smb snmpd snmptrapd speech-dispatcher systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2 update-system-flatpaks upower vncserver@ |
| indirect        | systemd-userdbd wickedd                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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

BOOT\_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default  
root=UUID=ffed421b-5355-4239-930e-65c8da5720c8  
splash=silent  
mitigations=auto  
quiet  
security=apparmor  
crashkernel=365M,high  
crashkernel=72M,low

15. cpupower frequency-info

analyzing CPU 26:  
current policy: frequency should be within 800 MHz and 3.90 GHz.  
The governor "powersave" may decide which speed to use within this range.

boost state support:

Supported: yes  
Active: yes

16. 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  |

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### Platform Notes (Continued)

```
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
```

```
-----
17. /sys/kernel/mm/transparent_hugepage
defrag          always defer+madvice [madvice] never
enabled         [always] madvice never
hpage_pmd_size  2097152
shmem_enabled   always within_size advise [never] deny force
-----
```

```
-----
18. /sys/kernel/mm/transparent_hugepage/khugepaged
alloc_sleep_millisecs  60000
defrag                 1
max_ptes_none          511
max_ptes_shared        256
max_ptes_swap          64
pages_to_scan          4096
scan_sleep_millisecs   10000
-----
```

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

```
-----
20. Disk information
SPEC is set to: /home/cpu2017
Filesystem  Type  Size  Used Avail Use% Mounted on
/dev/nvme0n1p3 btrfs 1.5T  9.7G  1.5T   1% /home
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor:      Supermicro
Product:     Super Server
Product Family: Family
Serial:      0123456789
-----
```

```
-----
22. 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:
24x Micron Technology MTC40F2046S1HC88XD1 WCCCC 64 GB 2 rank 8800
-----
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:      American Megatrends International, LLC.
-----
```

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# SPEC CPU®2017 Integer Speed Result

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## Supermicro

SuperServer SYS-122HA-TN-LCC  
(X14DBM-APL , Intel Xeon 6980P)

SPECspeed®2017\_int\_base = 13.5

SPECspeed®2017\_int\_peak = 13.6

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2024

Hardware Availability: Nov-2024

Software Availability: Jun-2024

## Platform Notes (Continued)

BIOS Version: 1.1  
BIOS Date: 11/06/2024  
BIOS Revision: 5.35

## Compiler Version Notes

```
=====
C      | 600.perlbench_s(base, peak) 602.gcc_s(base, peak) 605.mcf_s(base, peak) 625.x264_s(base, peak)
      | 657.xz_s(base, peak)
=====
```

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

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

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

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

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

## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

## 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

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## Base Portability Flags (Continued)

631.deepsjeng\_s: -DSPEC\_LP64  
641.leela\_s: -DSPEC\_LP64  
648.exchange2\_s: -DSPEC\_LP64  
657.xz\_s: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp  
-DSPEC\_OPENMP -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xCORE-AVX512 -O3 -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xCORE-AVX512 -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



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## Supermicro

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SPECspeed®2017\_int\_peak = 13.6

CPU2017 License: 001176

Test Sponsor: Supermicro

Tested by: Supermicro

Test Date: Dec-2024

Hardware Availability: Nov-2024

Software Availability: Jun-2024

## 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)
-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 -xCORE-AVX512 -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/Supermicro-Platform-Settings-V1.2-SPR-revG.html>

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



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**CPU2017 License:** 001176

**Test Sponsor:** Supermicro

**Tested by:** Supermicro

**Test Date:** Dec-2024

**Hardware Availability:** Nov-2024

**Software Availability:** Jun-2024

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

<http://www.spec.org/cpu2017/flags/Supermicro-Platform-Settings-V1.2-SPR-revG.xml>

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

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