



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 100

PowerEdge T160 (Intel Xeon 6353P)

SPECrate®2017\_fp\_peak = 101

CPU2017 License: 6573

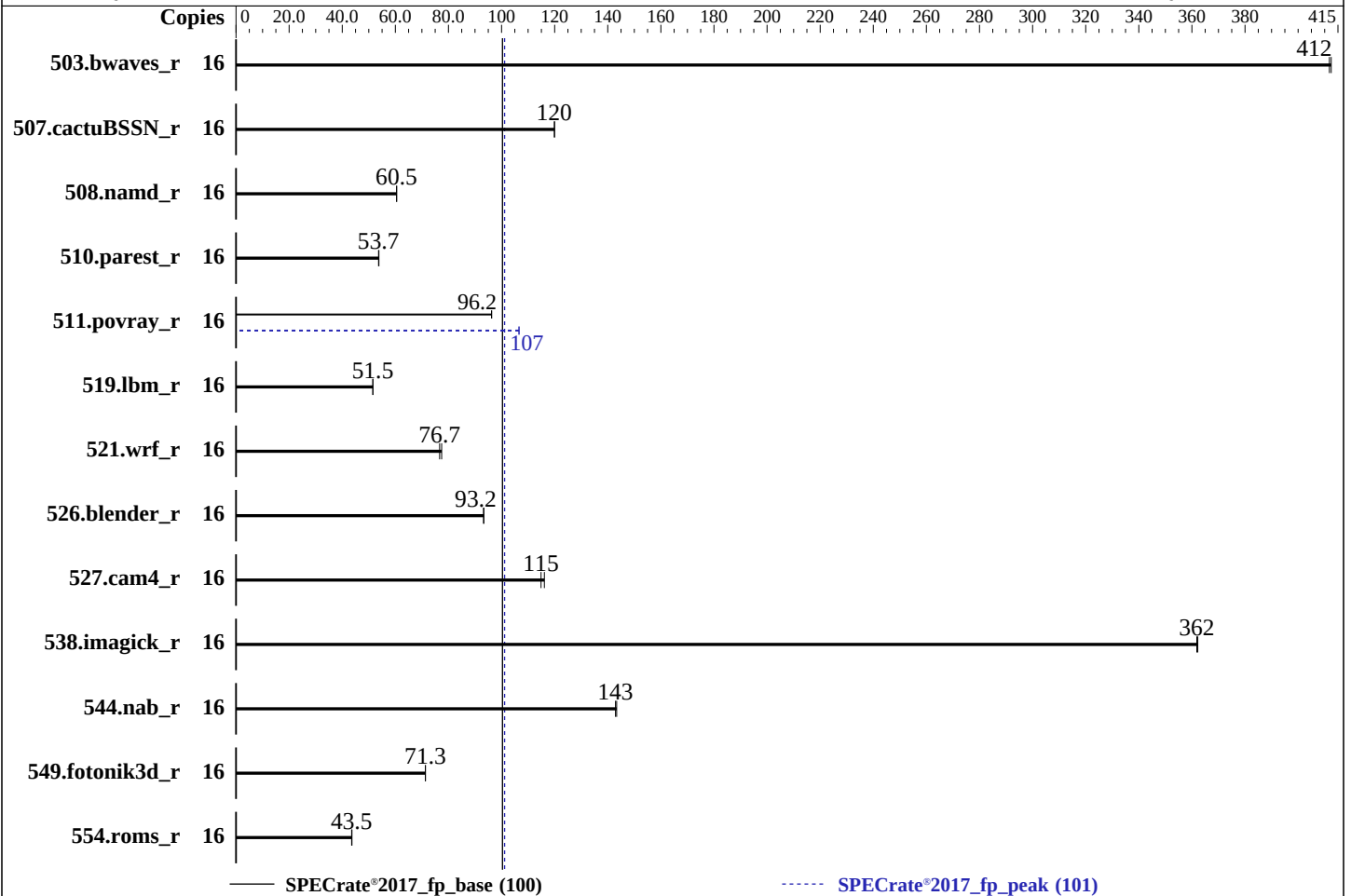
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2024



## Hardware

CPU Name: Intel Xeon 6353P  
Max MHz: 5400  
Nominal: 2700  
Enabled: 8 cores, 1 chip, 2 threads/core  
Orderable: 1 chip  
Cache L1: 32 KB I + 48 KB D on chip per core  
L2: 2 MB I+D on chip per core  
L3: 24 MB I+D on chip per chip  
Other: None  
Memory: 64 GB (2 x 32 GB 2Rx8 PC5-5600B-E, running at 4400)  
Storage: 40 GB on tmpfs  
Other: CPU Cooling: Air

## 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: No  
Firmware: Version 2.0.0 released Dec-2024  
File System: tmpfs  
System State: Run level 3 (multi-user)  
Base Pointers: 64-bit  
Peak Pointers: 64-bit  
Other: jemalloc memory allocator V5.0.1  
Power Management: BIOS set to prefer performance at the cost of additional power usage.



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## Results Table

| Benchmark       | Base   |            |             |            |             |         |       | Peak   |            |             |            |             |         |       |
|-----------------|--------|------------|-------------|------------|-------------|---------|-------|--------|------------|-------------|------------|-------------|---------|-------|
|                 | Copies | Seconds    | Ratio       | Seconds    | Ratio       | Seconds | Ratio | Copies | Seconds    | Ratio       | Seconds    | Ratio       | Seconds | Ratio |
| 503.bwaves_r    | 16     | 389        | 412         | <b>390</b> | <b>412</b>  |         |       | 16     | 389        | 412         | <b>390</b> | <b>412</b>  |         |       |
| 507.cactuBSSN_r | 16     | <b>169</b> | <b>120</b>  | 169        | 120         |         |       | 16     | <b>169</b> | <b>120</b>  | 169        | 120         |         |       |
| 508.namd_r      | 16     | <b>251</b> | <b>60.5</b> | 251        | 60.5        |         |       | 16     | <b>251</b> | <b>60.5</b> | 251        | 60.5        |         |       |
| 510.parest_r    | 16     | 778        | 53.8        | <b>780</b> | <b>53.7</b> |         |       | 16     | 778        | 53.8        | <b>780</b> | <b>53.7</b> |         |       |
| 511.povray_r    | 16     | 388        | 96.3        | <b>388</b> | <b>96.2</b> |         |       | 16     | <b>351</b> | <b>107</b>  | 351        | 107         |         |       |
| 519.lbm_r       | 16     | 327        | 51.6        | <b>327</b> | <b>51.5</b> |         |       | 16     | 327        | 51.6        | <b>327</b> | <b>51.5</b> |         |       |
| 521.wrf_r       | 16     | <b>467</b> | <b>76.7</b> | 463        | 77.4        |         |       | 16     | <b>467</b> | <b>76.7</b> | 463        | 77.4        |         |       |
| 526.blender_r   | 16     | <b>261</b> | <b>93.2</b> | 261        | 93.3        |         |       | 16     | <b>261</b> | <b>93.2</b> | 261        | 93.3        |         |       |
| 527.cam4_r      | 16     | 241        | 116         | <b>244</b> | <b>115</b>  |         |       | 16     | 241        | 116         | <b>244</b> | <b>115</b>  |         |       |
| 538.imagick_r   | 16     | <b>110</b> | <b>362</b>  | 110        | 362         |         |       | 16     | <b>110</b> | <b>362</b>  | 110        | 362         |         |       |
| 544.nab_r       | 16     | 188        | 143         | <b>188</b> | <b>143</b>  |         |       | 16     | 188        | 143         | <b>188</b> | <b>143</b>  |         |       |
| 549.fotonik3d_r | 16     | <b>874</b> | <b>71.3</b> | 874        | 71.3        |         |       | 16     | <b>874</b> | <b>71.3</b> | 874        | 71.3        |         |       |
| 554.roms_r      | 16     | 582        | 43.7        | <b>584</b> | <b>43.5</b> |         |       | 16     | 582        | 43.7        | <b>584</b> | <b>43.5</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 taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

## Operating System Notes

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

## Environment Variables Notes

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

LD\_LIBRARY\_PATH =

"/mnt/ramdisk/cpu2017-1.1.9-ic2024.1/lib/intel64:/mnt/ramdisk/cpu2017-1.1.9-ic2024.1/je5.0.1-64"

MALLOC\_CONF = "retain:true"

## 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  
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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## General Notes (Continued)

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.

Benchmark run from a 40 GB ramdisk created with the cmd: "mount -t tmpfs -o size=40G tmpfs /mnt/ramdisk"

## Platform Notes

### BIOS Settings:

System Profile : Custom  
CPU Power Management : Maximum Performance

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2024.1/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on 1234567-T160 Sun Mar 16 22:47:00 2025

SUT (System Under Test) info as seen by some common utilities.

### Table of contents

1. uname -a
  2. w
  3. Username
  4. ulimit -a
  5. sysinfo process ancestry
  6. /proc/cpuinfo
  7. lscpu
  8. numactl --hardware
  9. /proc/meminfo
  10. who -r
  11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)
  12. 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 1234567-T160 6.4.0-150600.21-default #1 SMP PREEMPT\_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36c1e09/lp)  
x86\_64 x86\_64 x86\_64 GNU/Linux
  2. w

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## Platform Notes (Continued)

```
22:47:00 up 3:44, 1 user, load average: 13.73, 15.49, 15.76
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU   WHAT
root      tty2      -              19:20   3:26m  0.78s  0.00s  /bin/bash
/home/DellFiles/bin/Intel/dell-run-speccpu.sh rate --define DL-VERS=6.1a --output_format html,pdf,txt
```

### 3. Username

From environment variable \$USER: root

### 4. ulimit -a

```
core file size          (blocks, -c) unlimited
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 0
file size               (blocks, -f) unlimited
pending signals         (-i) 254802
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) 254802
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

### 5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=42
login -- root
-bash
/bin/bash /home/DellFiles/bin/DELL_rate.sh
/bin/bash /home/DellFiles/bin/dell-run-main.sh rate
/bin/bash /home/DellFiles/bin/dell-run-main.sh rate
/bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh rate --define DL-VERS=6.1a --output_format
html,pdf,txt
/bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh rate --define DL-VERS=6.1a --output_format
html,pdf,txt
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=16 -c
ic2024.1-lin-core-avx2-rate-20240308.cfg --define smt-on --define cores=8 --define physicallogical
--define no-numa --tune base,peak --output_format all --define drop_caches --iterations 2 --define DL-VERS=6.1a
--output_format html,pdf,txt fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=16 --configfile
ic2024.1-lin-core-avx2-rate-20240308.cfg --define smt-on --define cores=8 --define physicallogical
--define no-numa --tune base,peak --output_format all --define drop_caches --iterations 2 --define
DL-VERS=6.1a --output_format html,pdf,txt --nopower --runmode rate --tune base:peak --size refrate fprate
--nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.002/temlogs/preenv.fprate.002.0.log --lognum 002.0
--from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu2017-1.1.9-ic2024.1
```

### 6. /proc/cpuinfo

```
model name      : Intel(R) Xeon(R) 6353P
vendor_id       : GenuineIntel
cpu family      : 6
model           : 183
stepping        : 1
```

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## Platform Notes (Continued)

microcode : 0x12c  
bugs : spectre\_v1 spectre\_v2 spec\_store\_bypass swapgs eibrs\_pbrsb bhi  
cpu cores : 8  
siblings : 16  
1 physical ids (chips)  
16 processors (hardware threads)  
physical id 0: core ids 0-7  
physical id 0: apicids 0-15

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

### 7. lscpu

From lscpu from util-linux 2.39.3:

Architecture: x86\_64  
CPU op-mode(s): 32-bit, 64-bit  
Address sizes: 42 bits physical, 48 bits virtual  
Byte Order: Little Endian  
CPU(s): 16  
On-line CPU(s) list: 0-15  
Vendor ID: GenuineIntel  
BIOS Vendor ID: Intel  
Model name: Intel(R) Xeon(R) 6353P  
BIOS Model name: Intel(R) Xeon(R) 6353P CPU @ 2.7GHz  
BIOS CPU family: 179  
CPU family: 6  
Model: 183  
Thread(s) per core: 2  
Core(s) per socket: 8  
Socket(s): 1  
Stepping: 1  
BogoMIPS: 5376.00  
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 pdcmm sse4\_1 sse4\_2 x2apic movbe popcnt tsc\_deadline\_timer aes  
xsave avx f16c rdrand lahf\_lm abm 3dnowprefetch cpuid\_fault ssbd ibrs  
ibpb stibp ibrs\_enhanced tpr\_shadow flexpriority ept vpid ept\_ad  
fsgsbase tsc\_adjust bmi1 avx2 smep bmi2 erms invpcid rdseed adx smap  
clflushopt clwb intel\_pt sha\_ni xsaveopt xsavec xgetbv1 xsaves  
split\_lock\_detect user\_shstk avx\_vnni dtherm ida arat pln pts hfi  
vnmi umip pku ospke waitpkg gfni vaes vpclmulqdq tme rdpid movdiri  
movdir64b fsrm md\_clear serialize pconfig arch\_lbr ibt flush\_l1d  
arch\_capabilities  
Virtualization: VT-x  
L1d cache: 384 KiB (8 instances)  
L1i cache: 256 KiB (8 instances)  
L2 cache: 16 MiB (8 instances)  
L3 cache: 24 MiB (1 instance)  
NUMA node(s): 1  
NUMA node0 CPU(s): 0-15  
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

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## Platform Notes (Continued)

Vulnerability Reg file data sampling: Not affected  
Vulnerability Retbleed: Not affected  
Vulnerability Spec rstack overflow: Not affected  
Vulnerability Spec store bypass: Mitigation; Speculative Store Bypass disabled via prctl  
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and \_\_user pointer sanitization  
Vulnerability Spectre v2: Mitigation; Enhanced / Automatic IBRS; IBPB conditional; RSB filling; PBRSE-eIBRS SW sequence; BHI BHI\_DIS\_S  
Vulnerability Srbds: Not affected  
Vulnerability Tsx async abort: Not affected

From lscpu --cache:

| NAME | ONE-SIZE | ALL-SIZE | WAYS | TYPE        | LEVEL | SETS  | PHY-LINE | COHERENCY-SIZE |
|------|----------|----------|------|-------------|-------|-------|----------|----------------|
| L1d  | 48K      | 384K     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 32K      | 256K     | 8    | Instruction | 1     | 64    | 1        | 64             |
| L2   | 2M       | 16M      | 16   | Unified     | 2     | 2048  | 1        | 64             |
| L3   | 24M      | 24M      | 12   | Unified     | 3     | 32768 | 1        | 64             |

8. numactl --hardware

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

available: 1 nodes (0)  
node 0 cpus: 0-15  
node 0 size: 63731 MB  
node 0 free: 51989 MB  
node distances:  
node 0  
0: 10

9. /proc/meminfo

MemTotal: 65260748 kB

10. who -r

run-level 3 Mar 16 19:19 last=5

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         | ModemManager 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 nsd nvme-fc-boot-connections nvmmf-autoconnect postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny wpa_supplicant                             |
| enabled-runtime | systemd-remount-fs                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| disabled        | NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon autofs 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 fsidd gpm grub2-once haveged ipmi ipmievad issue-add-ssh-keys kexec-load ksm kvm_stat lunmask man-db-create multipathd nfs nfs-blkmap nmb openvpn@ |

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## Platform Notes (Continued)

indirect  
ostree-remount rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@  
smartd\_generate\_opts smb snmpd snmptrapd speech-dispatcherd systemd-boot-check-no-failures  
systemd-confext systemd-network-generator systemd-sysextd systemd-time-wait-sync  
systemd-timesyncd udisks2 update-system-flatpaks upower vncserver@ wpa\_supplicant@  
pcscd saned@ systemd-userdbd wickedd

-----  
14. Linux kernel boot-time arguments, from /proc/cmdline  
BOOT\_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default  
root=UUID=2a69511c-598a-40aa-844b-92e3dd8a9445  
splash=silent  
resume=/dev/disk/by-uuid/9a0d71b5-e49e-4a82-863c-b71fee353f31  
mitigations=auto  
quiet  
security=apparmor  
crashkernel=328M,high  
crashkernel=72M,low  
-----

-----  
15. cpupower frequency-info  
analyzing CPU 4:  
Unable to determine current policy  
boost state support:  
Supported: yes  
Active: yes  
-----

-----  
16. sysctl  
kernel.numa\_balancing 0  
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  
-----

-----  
17. /sys/kernel/mm/transparent\_hugepage  
defrag always defer defer+madvise [madvise] never  
enabled [always] madvise 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  
-----

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## Platform Notes (Continued)

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: /mnt/ramdisk/cpu2017-1.1.9-ic2024.1  
Filesystem Type Size Used Avail Use% Mounted on  
tmpfs tmpfs 40G 5.0G 36G 13% /mnt/ramdisk

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

Vendor: Dell Inc.  
Product: PowerEdge T160  
Product Family: PowerEdge  
Serial: 1234567

### 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:  
2x 00AD00001501 HMC88AGBEA084N 32 GB 2 rank 5600, configured at 4400

### 23. BIOS

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

BIOS Vendor: Dell Inc.  
BIOS Version: 2.0.0  
BIOS Date: 12/20/2024  
BIOS Revision: 2.0

## Compiler Version Notes

C | 519.lbm\_r(base, peak) 538.imagick\_r(base, peak) 544.nab\_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++ | 508.namd\_r(base, peak) 510.parest\_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++, C | 511.povray\_r(base, peak) 526.blender\_r(base, peak)

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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
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C++, C, Fortran | 507.cactuBSSN\_r(base, peak)

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Fortran | 503.bwaves\_r(base, peak) 549.fotonik3d\_r(base, peak) 554.roms\_r(base, peak)

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2024.1.0 Build 20240308  
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Fortran, C | 521.wrf\_r(base, peak) 527.cam4\_r(base, peak)

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## Base Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017\_fp\_base = 100

PowerEdge T160 (Intel Xeon 6353P)

SPECrate®2017\_fp\_peak = 101

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Mar-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2024

## Base Portability Flags

503.bwaves\_r: -DSPEC\_LP64  
507.cactuBSSN\_r: -DSPEC\_LP64  
508.namd\_r: -DSPEC\_LP64  
510.parest\_r: -DSPEC\_LP64  
511.povray\_r: -DSPEC\_LP64  
519.lbm\_r: -DSPEC\_LP64  
521.wrf\_r: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG -convert big\_endian  
526.blender\_r: -DSPEC\_LP64 -DSPEC\_LINUX -funsigned-char  
527.cam4\_r: -DSPEC\_LP64 -DSPEC\_CASE\_FLAG  
538.imagick\_r: -DSPEC\_LP64  
544.nab\_r: -DSPEC\_LP64  
549.fotonik3d\_r: -DSPEC\_LP64  
554.roms\_r: -DSPEC\_LP64

## Base Optimization Flags

C benchmarks:

-w -std=c11 -m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-Wno-implicit-int -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math -flto  
-mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both Fortran and C:

-w -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -Ofast -ffast-math  
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4  
-Wno-implicit-int -nostandard-realloc-lhs -align array32byte -auto  
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using both C and C++:

-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -Wno-implicit-int -ljemalloc  
-L/usr/local/jemalloc64-5.0.1/lib

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CPU2017 License: 6573

Test Sponsor: Dell Inc.

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Test Date: Mar-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2024

## Base Optimization Flags (Continued)

Benchmarks using Fortran, C, and C++:

```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xCORE-AVX2 -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -Wno-implicit-int -nostandard-realloc-lhs  
-align array32byte -auto -ljemalloc -L/usr/local/jemalloc64-5.0.1/lib
```

## Peak Compiler Invocation

C benchmarks:

icx

C++ benchmarks:

icpx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using both C and C++:

icpx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

519.lbm\_r: basepeak = yes

538.imagick\_r: basepeak = yes

544.nab\_r: basepeak = yes

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# SPEC CPU®2017 Floating Point Rate Result

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CPU2017 License: 6573

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Tested by: Dell Inc.

Test Date: Mar-2025

Hardware Availability: Mar-2025

Software Availability: Jun-2024

## Peak Optimization Flags (Continued)

C++ benchmarks:

508.namd\_r: basepeak = yes

510.parest\_r: basepeak = yes

Fortran benchmarks:

503.bwaves\_r: basepeak = yes

549.fotonik3d\_r: basepeak = yes

554.roms\_r: basepeak = yes

Benchmarks using both Fortran and C:

521.wrf\_r: basepeak = yes

527.cam4\_r: basepeak = yes

Benchmarks using both C and C++:

```
511.povray_r: -w -std=c++14 -m64 -std=c11 -wl, -z, muldefs
-fprofile-generate(pass 1)
-fprofile-use=default.profdata(pass 2) -xCORE-AVX2 -flto
-Ofast -ffast-math -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

526.blender\_r: basepeak = yes

Benchmarks using Fortran, C, and C++:

507.cactuBSSN\_r: basepeak = yes

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

<http://www.spec.org/cpu2017/flags/Intel-ic2025-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.18t.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2025-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Dell-Platform-Flags-PowerEdge-Intel-Xeon-v1.18t.xml>



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