



SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Dell Inc.

SPECrate®2017_fp_base = 375

PowerEdge XR8720t (Intel Xeon 6716P-B)

SPECrate®2017_fp_peak = 395

CPU2017 License: 6573

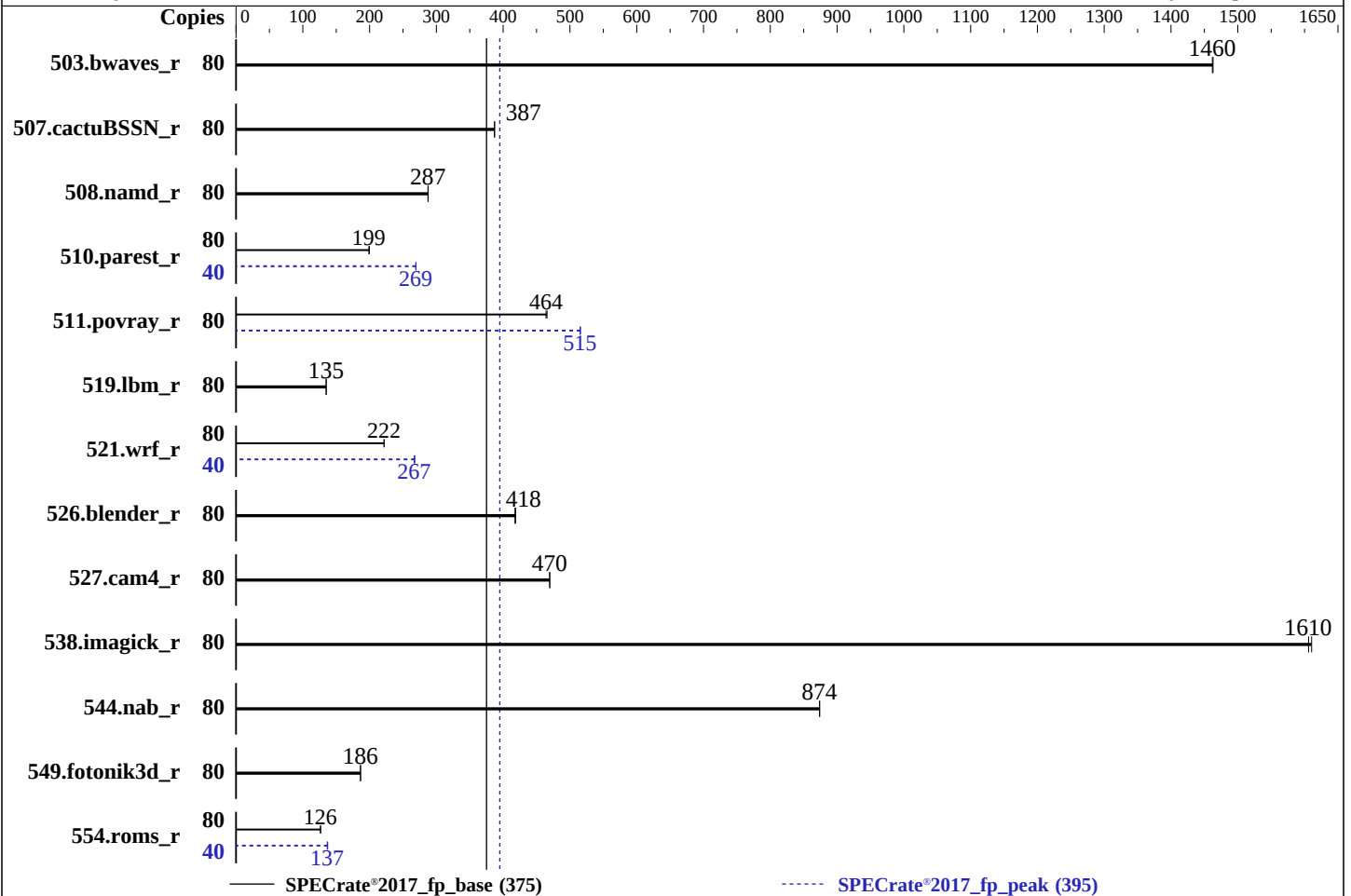
Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2025

Hardware Availability: Jan-2026

Software Availability: Sep-2025



Hardware

CPU Name: Intel Xeon 6716P-B
Max MHz: 3500
Nominal: 2500
Enabled: 40 cores, 1 chip, 2 threads/core
Orderable: 1 chip
Cache L1: 64 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 160 MB I+D on chip per chip
Other: None
Memory: 256 GB (4 x 64 GB 2Rx4 PC5-6400B-R)
Storage: 70 GB on tmpfs
Other: CPU Cooling: Air

Software

OS: Red Hat Enterprise Linux 10.0 (Coughlan)
6.12.0-55.29.1.el10_0.x86_64
Compiler: C/C++: Version 2025.2 of Intel oneAPI DPC++/C++
Compiler for Linux;
Fortran: Version 2025.2 of Intel Fortran Compiler
for Linux;
Parallel: No
Firmware: Version 1.0.4 released Nov-2025
File System: tmpfs
System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 64-bit
Other: jemalloc memory allocator V5.0.1
Power Management: BIOS set to prefer performance at the cost of
additional power usage.



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	80	548	1460	<u>549</u>	<u>1460</u>			80	548	1460	<u>549</u>	<u>1460</u>		
507.cactuBSSN_r	80	<u>262</u>	<u>387</u>	262	387			80	<u>262</u>	<u>387</u>	262	387		
508.namd_r	80	264	288	<u>264</u>	<u>287</u>			80	264	288	<u>264</u>	<u>287</u>		
510.parest_r	80	1048	200	<u>1052</u>	<u>199</u>			40	<u>389</u>	<u>269</u>	388	270		
511.povray_r	80	401	466	<u>402</u>	<u>464</u>			80	<u>363</u>	<u>515</u>	362	516		
519.lbm_r	80	<u>625</u>	<u>135</u>	625	135			80	<u>625</u>	<u>135</u>	625	135		
521.wrf_r	80	808	222	<u>808</u>	<u>222</u>			40	<u>336</u>	<u>267</u>	335	268		
526.blender_r	80	291	419	<u>292</u>	<u>418</u>			80	291	419	<u>292</u>	<u>418</u>		
527.cam4_r	80	298	470	<u>298</u>	<u>470</u>			80	298	470	<u>298</u>	<u>470</u>		
538.imagick_r	80	<u>124</u>	<u>1610</u>	124	1610			80	<u>124</u>	<u>1610</u>	124	1610		
544.nab_r	80	<u>154</u>	<u>874</u>	154	874			80	<u>154</u>	<u>874</u>	154	874		
549.fotonik3d_r	80	<u>1673</u>	<u>186</u>	1672	186			80	<u>1673</u>	<u>186</u>	1672	186		
554.roms_r	80	<u>1006</u>	<u>126</u>	1003	127			40	463	137	<u>465</u>	<u>137</u>		

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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-ic2025.2/lib/intel64:/mnt/ramdisk/cpu2017-1.1.9-ic2025.2/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)

Benchmark run from a 70 GB ramdisk created with the cmd: "mount -t tmpfs -o size=70G tmpfs /mnt/ramdisk"

Platform Notes

BIOS Settings:

AMP Prefetch : Enabled

System Profile : Custom

Latency Optimized Mode : Enabled

Memory Paging Policy : Closed Paging

Sysinfo program /mnt/ramdisk/cpu2017-1.1.9-ic2025.2/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on SLXR871-XR8720t Sat Dec 13 18:24:54 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 257 (257-9.el10_0.1-g8cd5633)
12. Services, from systemctl list-unit-files
13. Linux kernel boot-time arguments, from /proc/cmdline
14. cpupower frequency-info
15. tuned-adm active
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 SLXR871-XR8720t 6.12.0-55.29.1.el10_0.x86_64 #1 SMP PREEMPT_DYNAMIC Mon Aug 18 05:37:24 EDT 2025
x86_64 GNU/Linux

2. w
18:24:54 up 4:22, 2 users, load average: 55.04, 73.89, 77.74
USER TTY LOGIN@ IDLE JCPU PCPU WHAT
root tty1 17:49 25:18 0.37s 0.18s tail -f /mnt/ramdisk/cpu2017-1.1.9-ic2025.2/result/Dell.log
root 17:49 4:21m 0.00s 0.15s /usr/lib/systemd/systemd --user

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Platform Notes (Continued)

3. Username

From environment variable \$USER: root

4. ulimit -a

```
real-time non-blocking time (microseconds, -R) unlimited
core file size              (blocks, -c) unlimited
data seg size               (kbytes, -d) unlimited
scheduling priority         (-e) 0
file size                   (blocks, -f) unlimited
pending signals             (-i) 1026786
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) 1026786
virtual memory              (kbytes, -v) unlimited
file locks                  (-x) unlimited
```

5. sysinfo process ancestry

```
/usr/lib/systemd/systemd --switched-root --system --deserialize=47 rhgb
/usr/sbin/crond -n
/usr/sbin/CROND -n
/bin/bash /home/DellFiles/bin/dell-crontab-run.sh dell-batch.sh
/bin/bash /home/DellFiles/bin/dell-crontab-run.sh dell-batch.sh
/bin/bash /home/DellFiles/bin/dell-batch.sh
/bin/bash /home/DellFiles/bin/dell-batch.sh
/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=6.4_T19 --output_format
html, pdf, txt
/bin/bash /home/DellFiles/bin/Intel/dell-run-speccpu.sh rate --define DL-VERS=6.4_T19 --output_format
html, pdf, txt
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=80 -c
ic2025.2-linux64-graniterapids-rate-20250605.cfg --define smt-on --define cores=40 --define physicalfirst
--define no-numa --tune base,peak --output_format all --define drop_caches --iterations 2 --define DL-VERS=6.4_T19
--output_format html, pdf, txt fprate
runcpu --nobuild --action validate --define default-platform-flags --define numcopies=80 --configfile
ic2025.2-linux64-graniterapids-rate-20250605.cfg --define smt-on --define cores=40 --define physicalfirst
--define no-numa --tune base,peak --output_format all --define drop_caches --iterations 2 --define
DL-VERS=6.4_T19 --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-ic2025.2
```

6. /proc/cpuinfo

```
model name      : INTEL(R) XEON(R) 6716P-B
vendor_id       : GenuineIntel
cpu family      : 6
model           : 174
stepping        : 1
```

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Platform Notes (Continued)

microcode : 0x10002b3
bugs : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores : 40
siblings : 80
1 physical ids (chips)
80 processors (hardware threads)
physical id 0: core ids 0-39
physical id 0: apicids 0-79

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 2.40.2:

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): 80
On-line CPU(s) list: 0-79
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel
Model name: INTEL(R) XEON(R) 6716P-B
BIOS Model name: INTEL(R) XEON(R) 6716P-B CPU @ 2.5GHz
BIOS CPU family: 179
CPU family: 6
Model: 174
Thread(s) per core: 2
Core(s) per socket: 40
Socket(s): 1
Stepping: 1
BogoMIPS: 5000.00
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 hfi vnmi avx512vbmi umip pku ospke waitpkg avx512_vbmi2
gfni vaes vpclmulqdq avx512_vnni avx512_bitalg 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: 1.9 MiB (40 instances)
L1i cache: 2.5 MiB (40 instances)
L2 cache: 80 MiB (40 instances)
L3 cache: 160 MiB (1 instance)
NUMA node(s): 1
NUMA node0 CPU(s): 0-79
Vulnerability Gather data sampling: Not affected

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Platform Notes (Continued)

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
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	1.9M	12	Data	1	64	1	64
L1i	64K	2.5M	16	Instruction	1	64	1	64
L2	2M	80M	16	Unified	2	2048	1	64
L3	160M	160M	16	Unified	3	163840	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: 0-79
node 0 size: 256913 MB
node 0 free: 240526 MB
node distances:
node 0
0: 10

9. /proc/meminfo

MemTotal: 263079224 kB

10. who -r

run-level 3 Dec 13 14:02

11. Systemd service manager version: systemd 257 (257-9.el10_0.1-g8cd5633)

Default Target Status
multi-user running

12. Services, from systemctl list-unit-files

STATE	UNIT FILES
enabled	ModemManager NetworkManager NetworkManager-dispatcher NetworkManager-wait-online accounts-daemon atd audit-rules auditd avahi-daemon bluetooth chronyd crond cups dbus-broker fips-crypto-policy-overlay firewallld gdm getty@ insights-client-boot irqbalance iscsi-onboot iscsi-starter kdump libstoragemgmt lvm2-monitor mcelog mdmonitor multipathd nvme-fc-boot-connections qemu-guest-agent rhsmcertd rsyslog rtkit-daemon selinux-autorelabel-mark smartd sshd sssd switcheroo-control systemd-confext systemd-network-generator systemd-pstore systemd-sysext tuned tuned-ppd udisks2 upower vgauthd vmtoolsd enabled-runtime systemd-remount-fs disabled arp-ethers blk-availability brltty canberra-system-bootup canberra-system-shutdown canberra-system-shutdown-reboot chrony-wait chronyd-restricted console-getty cups-browsed

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Platform Notes (Continued)

indirect

```
dbus-daemon debug-shell dnf-system-upgrade dnsmasq gnome-headless-session@
gnome-remote-desktop gnome-remote-desktop-configuration hypervfcopyd iscsi-init iscsid
iscsiuio kpatch kvm_stat ledmon low-memory-monitor lvm-devices-import
man-db-restart-cache-update microcode netavark-dhcp-proxy netavark-firewalld-reload
nftables nis-domainname nvme-autoconnect podman podman-auto-update podman-clean-transient
podman-kube@ podman-restart psacct ras-mc-ctl rasdaemon rhsm rhsm-facts rpmbd-migrate
rpmbd-rebuild selinux-check-proper-disable serial-getty@ speech-dispatcherd
ssh-host-keys-migration sshd-keygen@ systemd-boot-check-no-failures systemd-boot-update
systemd-PCRlock-file-system systemd-PCRlock-firmware-code systemd-PCRlock-firmware-config
systemd-PCRlock-machine-id systemd-PCRlock-make-policy
systemd-PCRlock-secureboot-authority systemd-PCRlock-secureboot-policy
systemd-udev-load-credentials wpa_supplicant wsd yggdrasil yggdrasil@
iscsi pcsd spice-vdagentd sshd@ sssd-autofs sssd-kcm sssd-nss sssd-pac sssd-pam sssd-ssh
sssd-sudo systemd-sysupdate systemd-sysupdate-reboot systemd-userdbd
```

```
-----
13. Linux kernel boot-time arguments, from /proc/cmdline
BOOT_IMAGE=(hd0,gpt2)/vmlinuz-6.12.0-55.29.1.el10_0.x86_64
root=/dev/mapper/rhel-root
ro
crashkernel=2G-64G:256M,64G-:512M
resume=UUID=cbb685cf-16aa-4a09-bfd3-26b1fcd0cf61
rd.lvm.lv=rhel/root
rd.lvm.lv=rhel/swap
rhgb
quiet
```

```
-----
14. cpupower frequency-info
analyzing CPU 5:
Unable to determine current policy
boost state support:
Supported: yes
Active: yes
```

```
-----
15. tuned-adm active
No current active profile.
```

```
-----
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
```

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Platform Notes (Continued)

```
-----
17. /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
-----
```

```
-----
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      Red Hat Enterprise Linux 10.0 (Coughlan)
redhat-release  Red Hat Enterprise Linux release 10.0 (Coughlan)
system-release  Red Hat Enterprise Linux release 10.0 (Coughlan)
-----
```

```
-----
20. Disk information
SPEC is set to: /mnt/ramdisk/cpu2017-1.1.9-ic2025.2
Filesystem      Type  Size  Used Avail Use% Mounted on
tmpfs           tmpfs  70G   5.8G   65G   9% /mnt/ramdisk
-----
```

```
-----
21. /sys/devices/virtual/dmi/id
Vendor:         Dell Inc.
Product:        PowerEdge XR8720t
Product Family: PowerEdge
Serial:         SLXR871
-----
```

```
-----
22. 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:
  4x 00AD063200AD HMC94AHBRA487N 64 GB 2 rank 6400
-----
```

```
-----
23. BIOS
(This section combines info from /sys/devices and dmidecode.)
BIOS Vendor:    Dell Inc.
BIOS Version:   1.0.4
BIOS Date:      11/13/2025
BIOS Revision:  1.0
-----
```



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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 2025.2.0 Build 20250605
Copyright (C) 1985-2025 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 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
=====

=====
C++, C | 511.povray_r(base, peak) 526.blender_r(base, peak)
=====

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
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Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
=====

=====
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)
=====

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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

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SPEC CPU®2017 Floating Point Rate Result

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Dell Inc.

SPECrate®2017_fp_base = 375

PowerEdge XR8720t (Intel Xeon 6716P-B)

SPECrate®2017_fp_peak = 395

CPU2017 License: 6573

Test Sponsor: Dell Inc.

Tested by: Dell Inc.

Test Date: Dec-2025

Hardware Availability: Jan-2026

Software Availability: Sep-2025

Base Compiler Invocation (Continued)

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

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 -xgraniterapids -Ofast -ffast-math

-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4

-Wno-implicit-int -mprefer-vector-width=512 -ljemalloc

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

C++ benchmarks:

-w -std=c++14 -m64 -Wl,-z,muldefs -xgraniterapids -Ofast

-ffast-math -flto -mfpmath=sse -funroll-loops

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Base Optimization Flags (Continued)

C++ benchmarks (continued):

-qopt-mem-layout-trans=4 -mprefer-vector-width=512 -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

-w -m64 -Wl,-z,muldefs -xgraniterapids -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 -xgraniterapids -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4
-Wno-implicit-int -mprefer-vector-width=512 -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 -xgraniterapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Benchmarks using Fortran, C, and C++:

-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512
-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

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Peak Compiler Invocation (Continued)

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

C++ benchmarks:

508.namd_r: basepeak = yes

510.parest_r: -w -std=c++14 -m64 -Wl,-z,muldefs -xgraniterapids
-Ofast -ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -mprefer-vector-width=512
-ljemalloc -L/usr/local/jemalloc64-5.0.1/lib

Fortran benchmarks:

503.bwaves_r: basepeak = yes

549.fotonik3d_r: basepeak = yes

554.roms_r: -w -m64 -Wl,-z,muldefs -xgraniterapids -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

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Peak Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
521.wrf_r: -w -m64 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs
-align array32byte -auto -ljemalloc
-L/usr/local/jemalloc64-5.0.1/lib
```

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.profddata(pass 2) -xCORE-AVX2(pass 1)
-flto -Ofast -xCORE-AVX512 -ffast-math -mfpmath=sse
-funroll-loops -qopt-mem-layout-trans=4 -Wno-implicit-int
-mprefer-vector-width=512 -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-v1.19.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-v1.19.xml>

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