



SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2026 Standard Performance Evaluation Corporation

Cisco Systems

Cisco UCS XE130c M8 (Intel Xeon 6543P-B processor)

SPECspeed®2017_fp_base = 168

SPECspeed®2017_fp_peak = 168

CPU2017 License: 9019

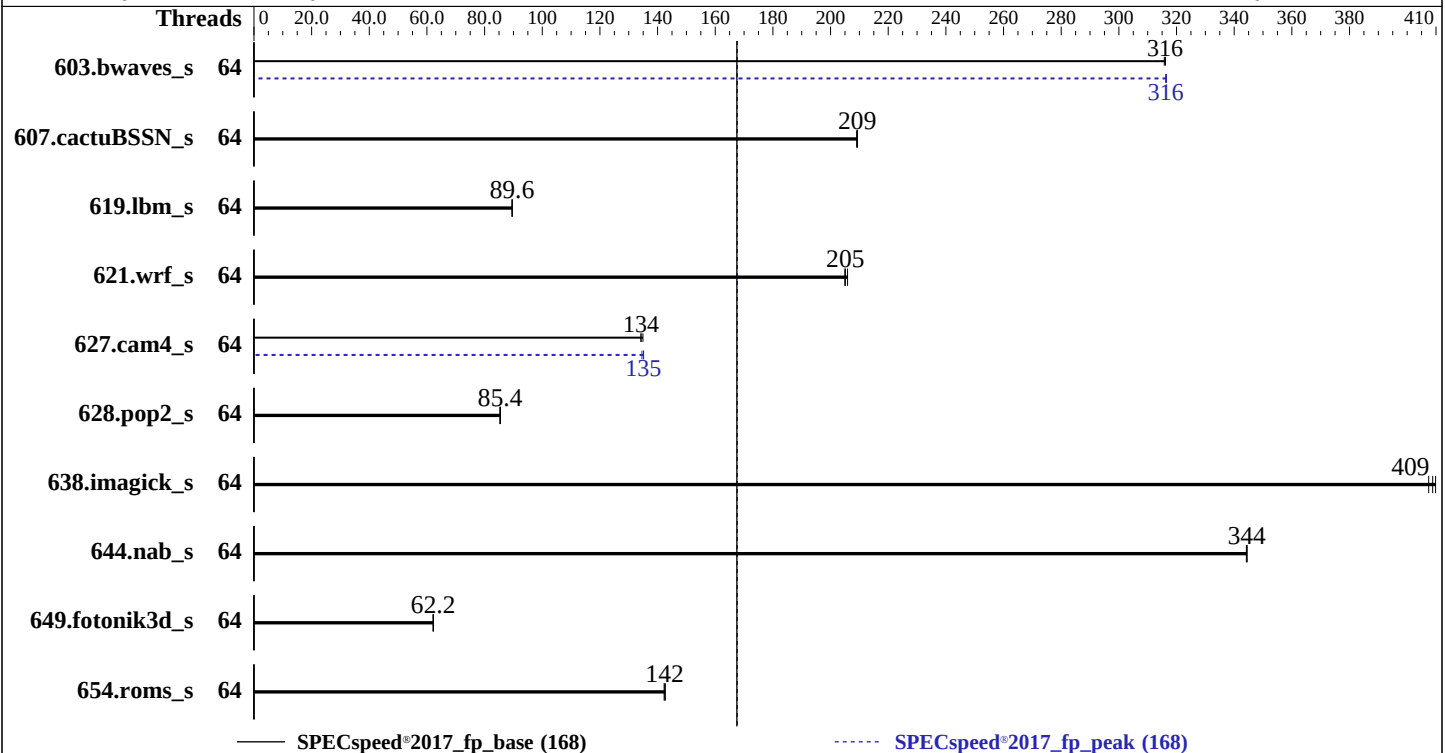
Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Aug-2026

Hardware Availability: Feb-2025

Software Availability: Jun-2025



Hardware

CPU Name: Intel Xeon 6543P-B
Max MHz: 3300
Nominal: 2000
Enabled: 32 cores, 1 chip, 2 threads/core
Orderable: 1 chips
Cache L1: 64 KB I + 48 KB D on chip per core
L2: 2 MB I+D on chip per core
L3: 128 MB I+D on chip per chip
Other: None
Memory: 512 GB (8 x 64 GB 2Rx4 PC5-6400B-R, running at 5200)
Storage: 1 x 2.4 TB NVME SSD
Other: CPU Cooling: Air

Software

OS: SUSE Linux Enterprise Server 15 SP7
6.4.0-150700.51-default
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: Yes
Firmware: Version 6.0.2c released May-2026
File System: xfs
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 and OS 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
603.bwaves_s	64	187	316	<u>187</u>	<u>316</u>	187	316	64	<u>187</u>	<u>316</u>	187	316	186	317
607.cactuBSSN_s	64	79.7	209	<u>79.7</u>	<u>209</u>	79.6	209	64	79.7	209	<u>79.7</u>	<u>209</u>	79.6	209
619.lbm_s	64	58.5	89.5	58.5	89.6	<u>58.5</u>	<u>89.6</u>	64	58.5	89.5	58.5	89.6	<u>58.5</u>	<u>89.6</u>
621.wrf_s	64	64.5	205	64.2	206	<u>64.5</u>	<u>205</u>	64	64.5	205	64.2	206	<u>64.5</u>	<u>205</u>
627.cam4_s	64	65.7	135	<u>66.0</u>	<u>134</u>	66.0	134	64	65.9	135	65.6	135	<u>65.6</u>	<u>135</u>
628.pop2_s	64	139	85.5	<u>139</u>	<u>85.4</u>	139	85.3	64	139	85.5	<u>139</u>	<u>85.4</u>	139	85.3
638.imagick_s	64	<u>35.3</u>	<u>409</u>	35.2	410	35.4	407	64	<u>35.3</u>	<u>409</u>	35.2	410	35.4	407
644.nab_s	64	50.8	344	50.7	344	<u>50.7</u>	<u>344</u>	64	50.8	344	50.7	344	<u>50.7</u>	<u>344</u>
649.fotonik3d_s	64	<u>147</u>	<u>62.2</u>	147	62.2	147	62.2	64	<u>147</u>	<u>62.2</u>	147	62.2	147	62.2
654.roms_s	64	110	143	<u>111</u>	<u>142</u>	111	142	64	110	143	<u>111</u>	<u>142</u>	111	142

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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,compact"

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:

Adjacent cache line prefetcher set to Enabled
DCU Streamer Prefetch set to Disabled
UPI Power Management set to Enabled
XPT prefetch set to Disabled
Patrol scrub set to Disabled

Sysinfo program /home/cpu2017/bin/sysinfo
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197
running on localhost Tue Aug 11 00:48:56 2026

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

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13. Linux kernel boot-time arguments, from /proc/cmdline
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20. /sys/devices/virtual/dmi/id
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1. uname -a
Linux localhost 6.4.0-150700.51-default #1 SMP PREEMPT_DYNAMIC Wed Apr 30 21:35:43 UTC 2025 (6930611)
x86_64 x86_64 x86_64 GNU/Linux

2. w
00:48:56 up 2 days, 10:36, 6 users, load average: 6.04, 6.88, 4.04
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT
root tty1 - Sat14 4:03m 1.77s 0.10s -bash
lab pts/0 10.189.153.195 23:48 59:59 0.03s 0.03s -bash
root tty2 - Sat23 2:46m 0.09s 0.09s -bash

3. Username
From environment variable \$USER: root

4. ulimit -a

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Platform Notes (Continued)

core file size	(blocks, -c)	unlimited
data seg size	(kbytes, -d)	unlimited
scheduling priority	(-e)	0
file size	(blocks, -f)	unlimited
pending signals	(-i)	2061588
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)	2061588
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 --define default-platform-flags -c ic2025.2-lin-graniterapids-speed-20250605.cfg --define cores=64
--tune all -o all --define drop_caches fpspeed
runcpu --define default-platform-flags --configfile ic2025.2-lin-graniterapids-speed-20250605.cfg --define
cores=64 --tune all --output_format all --define drop_caches --nopower --runmode speed --tune base:peak
--size refspeed fpspeed --nopreenv --note-preenv --logfile
$SPEC/tmp/CPU2017.004/templots/preenv.fpspeed.004.0.log --lognum 004.0 --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpu2017
```

6. /proc/cpuinfo

```
model name      : INTEL(R) XEON(R) 6543P-B
vendor_id       : GenuineIntel
cpu family      : 6
model           : 174
stepping        : 1
microcode       : 0x10002b3
bugs             : spectre_v1 spectre_v2 spec_store_bypass swapgs bhi
cpu cores       : 32
siblings        : 64
```

```
1 physical ids (chips)
64 processors (hardware threads)
physical id 0: core ids 0-31
physical id 0: apicids 0-63
```

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 2.40.4:

Architecture:	x86_64
CPU op-mode(s):	32-bit, 64-bit
Address sizes:	46 bits physical, 57 bits virtual
Byte Order:	Little Endian
CPU(s):	64
On-line CPU(s) list:	0-63

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Platform Notes (Continued)

Vendor ID: GenuineIntel
Model name: INTEL(R) XEON(R) 6543P-B
CPU family: 6
Model: 174
Thread(s) per core: 2
Core(s) per socket: 32
Socket(s): 1
Stepping: 1
CPU(s) scaling MHz: 42%
CPU max MHz: 3300.0000
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 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 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 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
L1d cache: 1.5 MiB (32 instances)
L1i cache: 2 MiB (32 instances)
L2 cache: 64 MiB (32 instances)
L3 cache: 128 MiB (1 instance)
NUMA node(s): 1
NUMA node0 CPU(s): 0-63
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
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

From lscpu --cache:

NAME	ONE-SIZE	ALL-SIZE	WAYS	TYPE	LEVEL	SETS	PHY-LINE	COHERENCY-SIZE
L1d	48K	1.5M	12	Data	1	64	1	64
L1i	64K	2M	16	Instruction	1	64	1	64
L2	2M	64M	16	Unified	2	2048	1	64
L3	128M	128M	16	Unified	3	131072	1	64

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Platform Notes (Continued)

8. numactl --hardware

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

```
available: 1 nodes (0)
node 0 cpus: 0-63
node 0 size: 515424 MB
node 0 free: 506861 MB
node distances:
node 0
0: 10
```

9. /proc/meminfo

MemTotal: 527794564 kB

10. who -r

run-level 3 Aug 8 14:12

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	YaST2-Firstboot YaST2-Second-Stage apparmor auditd cron display-manager getty@ irqbalance iscsi issue-generator kbdsettings klog lvm2-monitor nsd nvme-fc-boot-connections nvmmf-autoconnect postfix purge-kernels rollback rsyslog smartd sshd systemd-pstore virtqemu-wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime	systemd-remount-fs
disabled	autofs autostart-initscripts blk-availability boot-sysctl ca-certificates chrony-wait chronyd console-getty cups cups-browsed debug-shell dnsmasq ebttables exchange-bmc-os-info firewallld fsidd gpm grub2-once haveged hv_fcopy_daemon hv_fcopy_uio_daemon hv_kvp_daemon hv_yss_daemon ipmi ipmievd iscsi-init iscsid issue-add-ssh-keys kexec-load ksm kvm_stat libvirt-guests lunmask man-db-create multipathd nfs nfs-blkmap nfs-server nfs-server rpcbind rpmconfigcheck rsyncd rtkit-daemon serial-getty@ smartd-generate_opts snmpd snmptrapd strongswan strongswan-starter svnserv systemd-boot-check-no-failures systemd-confext systemd-network-generator systemd-nspawn@ systemd-sysext systemd-time-wait-sync systemd-timesyncd udisks2 virtinterfaced virtlockd virtlogd virtnetworkd virtnodevd virtwfilterd virtsecret virtstoraged vncserver@
indirect	pcsd systemd-userdbd tftp wickedd

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

```
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150700.51-default
root=UUID=86ab0dee-90cf-4b4c-946a-7d30ab25e77b
splash=silent
resume=/dev/disk/by-uuid/5dc9ab87-6c70-4c1c-98ed-839677e40db9
mitigations=auto
quiet
security=apparmor
```

14. cpupower frequency-info

analyzing CPU 39:

current policy: frequency should be within 800 MHz and 3.30 GHz.
The governor "performance" may decide which speed to use within this range.

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Platform Notes (Continued)

boost state support:

Supported: yes

Active: yes

15. 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                1
vm.watermark_boost_factor    15000
vm.watermark_scale_factor    10
vm.zone_reclaim_mode         0
```

16. /sys/kernel/mm/transparent_hugepage

```
defrag      [always] defer+madvise madvise never
enabled     [always] madvise 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
```

19. Disk information

SPEC is set to: /home/cpu2017

Filesystem	Type	Size	Used	Avail	Use%	Mounted on
/dev/nvme0n1p3	xfs	2.4T	116G	2.3T	5%	/home

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

```
Vendor:      Cisco Systems Inc
Product:     UCSXE-130C-M8-32
Product Family: Cisco Edge Server
Serial:      WZP301390T5
```

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Platform Notes (Continued)

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:

8x 0xCE00 M321R8GA0PB2-CCPKC 64 GB 2 rank 6400, configured at 5200

22. BIOS

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

BIOS Vendor: Cisco Systems, Inc.
BIOS Version: XE1X0M8.6.0.2c.0.0526261754
BIOS Date: 05/26/2026
BIOS Revision: 5.35

Compiler Version Notes

C | 619.lbm_s(base, peak) 638.imagick_s(base, peak) 644.nab_s(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, Fortran | 607.cactuBSSN_s(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.
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.
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.2.0 Build 20250605
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.

Fortran | 603.bwaves_s(base, peak) 649.fotonik3d_s(base, peak) 654.roms_s(base, peak)

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

Fortran, C | 621.wrf_s(base, peak) 627.cam4_s(base, peak) 628.pop2_s(base, peak)

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

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Base Portability Flags

603.bwaves_s: -DSPEC_LP64

607.cactuBSSN_s: -DSPEC_LP64

619.lbm_s: -DSPEC_LP64

621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian

627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG

628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian

-assume byterecl

638.imagick_s: -DSPEC_LP64

644.nab_s: -DSPEC_LP64

649.fotonik3d_s: -DSPEC_LP64

654.roms_s: -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 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-w -m64 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast -ffast-math

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SPECspeed®2017_fp_base = 168

SPECspeed®2017_fp_peak = 168

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: Aug-2026

Hardware Availability: Feb-2025

Software Availability: Jun-2025

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512
-nostandard-realloc-lhs -align array32byte -auto
-L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Benchmarks using Fortran, 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 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte
-auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

Peak Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

Benchmarks using both Fortran and C:

ifx icx

Benchmarks using Fortran, C, and C++:

icpx icx ifx

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

619.lbm_s: basepeak = yes

638.imagick_s: basepeak = yes

(Continued on next page)



SPEC CPU®2017 Floating Point Speed Result

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Cisco Systems

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Peak Optimization Flags (Continued)

644.nab_s: basepeak = yes

Fortran benchmarks:

603.bwaves_s: -w -m64 -wl, -z, muldefs -DSPEC_OPENMP -xgraniterapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs -align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

649.fotonik3d_s: basepeak = yes

654.roms_s: basepeak = yes

Benchmarks using both Fortran and C:

621.wrf_s: basepeak = yes

627.cam4_s: -w -m64 -std=c11 -wl, -z, muldefs -xgraniterapids -Ofast -ffast-math -flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs -align array32byte -auto -L/usr/local/jemalloc64-5.0.1/lib -ljemalloc

628.pop2_s: basepeak = yes

Benchmarks using Fortran, C, and C++:

607.cactuBSSN_s: 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/Cisco-Platform-Settings-V3.0-GNR-revA.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/Cisco-Platform-Settings-V3.0-GNR-revA.xml>

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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