



# SPEC CPU®2017 Floating Point Rate Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Cisco Systems

Cisco UCS C240 M8 (Intel Xeon 6724P 3.6 GHz processor)

**SPECrate®2017\_fp\_base = 543**

**SPECrate®2017\_fp\_peak = Not Run**

**CPU2017 License:** 9019

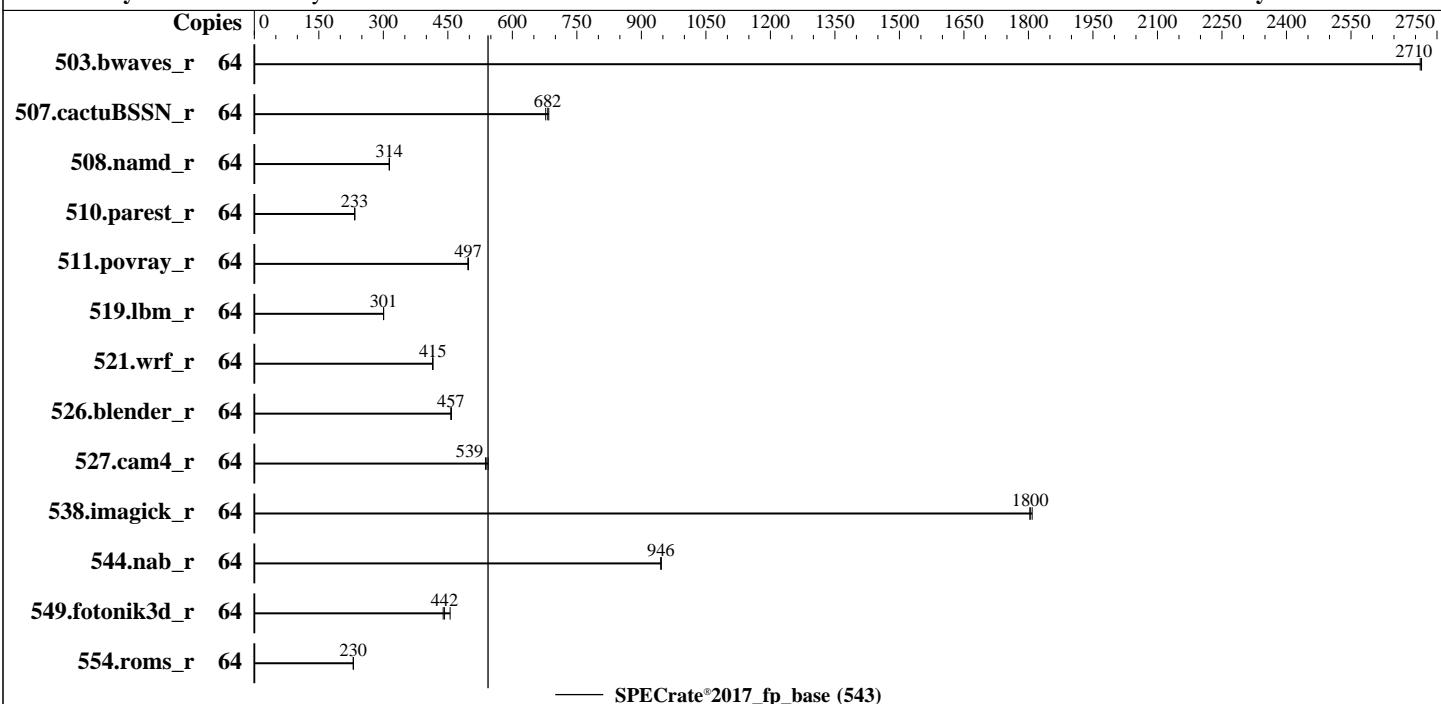
**Test Sponsor:** Cisco Systems

**Tested by:** Cisco Systems

**Test Date:** May-2025

**Hardware Availability:** Feb-2025

**Software Availability:** Mar-2025



### Hardware

CPU Name: Intel Xeon 6724P  
 Max MHz: 4300  
 Nominal: 3600  
 Enabled: 32 cores, 2 chips, 2 threads/core  
 Orderable: 1,2 chips  
 Cache L1: 64 KB I + 48 KB D on chip per core  
 L2: 2 MB I+D on chip per core  
 L3: 72 MB I+D on chip per chip  
 Other: None  
 Memory: 1 TB (16 x 64 GB 2Rx4 PC5-6400B-R)  
 Storage: 1 x 445 GB SATA SSD  
 Other: CPU Cooling: Air

### Software

OS: SUSE Linux Enterprise Server 15 SP6 6.4.0-150600.21-default  
 Compiler: C/C++: Version 2025.1 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2025.1 of Intel Fortran Compiler for Linux;  
 Parallel: No  
 Firmware: Version 4.3.6a released Mar-2025  
 File System: xfs  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit  
 Peak Pointers: Not Applicable  
 Other: jemalloc memory allocator V5.0.1  
 Power Management: BIOS and OS set to prefer performance at the cost of additional power usage



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
503.bwaves_r	64	236	2710	<b>237</b>	<b>2710</b>	237	2710							
507.cactuBSSN_r	64	120	677	<b>119</b>	<b>682</b>	118	685							
508.namd_r	64	<b>194</b>	<b>314</b>	194	314	194	314							
510.parest_r	64	717	233	<b>717</b>	<b>233</b>	718	233							
511.povray_r	64	300	498	<b>300</b>	<b>497</b>	301	497							
519.lbm_r	64	225	300	<b>224</b>	<b>301</b>	224	301							
521.wrf_r	64	346	415	345	415	<b>345</b>	<b>415</b>							
526.blender_r	64	213	458	213	457	<b>213</b>	<b>457</b>							
527.cam4_r	64	206	544	<b>208</b>	<b>539</b>	208	537							
538.imagick_r	64	<b>88.2</b>	<b>1800</b>	88.3	1800	88.0	1810							
544.nab_r	64	114	946	114	945	<b>114</b>	<b>946</b>							
549.fotonik3d_r	64	<b>564</b>	<b>442</b>	548	455	568	439							
554.roms_r	64	442	230	<b>442</b>	<b>230</b>	441	230							

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

## Submit Notes

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

## Operating System Notes

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

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
LD\_LIBRARY\_PATH = "/opt/intel/oneapi/2025.1/lib:/home/cpu2017/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  
runcpu command invoked through numactl i.e.:  
numactl --interleave=all runcpu <etc>

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

(Continued on next page)



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## General Notes (Continued)

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>

## Platform Notes

BIOS settings:

Hardware prefetcher set to Enabled

Adjacent cache line prefetcher set to Disabled

Patrol scrub set to Disabled

XPT prefetch set to Disabled

LLC prefetch set to Enabled

Enhanced CPU performance set to Auto

Sysinfo program /home/cpu2017/bin/sysinfo

Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197

running on c240m8-spec1 Thu May 22 06:25:47 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. 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 c240m8-spec1 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

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## Platform Notes (Continued)

-----  
2. w  
06:25:47 up 4:28, 4 users, load average: 0.00, 0.00, 0.50  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root ttym1 - 01:59 8.00s 0.92s 0.07s -bash  
root pts/0 10.29.148.129 02:01 11.00s 0.04s 0.04s -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  
pending signals (-i) 4125079  
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) 4125079  
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 -n 3 --define default-platform-flags --define numcopies=64 -c  
ic2025.1-lin-graniterapids-rate-20250428.cfg --define smt-on --define cores=32 --define physicalfirst  
--define invoke\_with\_interleave --define drop\_caches --tune base -o all fprate  
runcpu --nobuild --action validate --iterations 3 --define default-platform-flags --define numcopies=64  
--configfile ic2025.1-lin-graniterapids-rate-20250428.cfg --define smt-on --define cores=32 --define  
physicalfirst --define invoke\_with\_interleave --define drop\_caches --tune base --output\_format all  
--nopower --runmode rate --tune base --size refrate --nopreenv --note-preenv --logfile  
\$SPEC/tmp/CPU2017.291/templogs/preenv.fprate.291.0.log --lognum 291.0 --from\_runcpu 2  
specperl \$SPEC/bin/sysinfo  
\$SPEC = /home/cpu2017

-----  
6. /proc/cpuinfo  
model name : Intel(R) Xeon(R) 6724P  
vendor\_id : GenuineIntel  
cpu family : 6  
model : 173  
stepping : 1  
microcode : 0x1000380  
bugs : spectre\_v1 spectre\_v2 spec\_store\_bypass swapgs bhi  
cpu cores : 16  
siblings : 32  
2 physical ids (chips)  
64 processors (hardware threads)

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## Platform Notes (Continued)

```
physical id 0: core ids 0-15
physical id 1: core ids 0-15
physical id 0: apicids 0-31
physical id 1: apicids 128-159
```

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: 46 bits physical, 57 bits virtual
Byte Order: Little Endian
CPU(s): 64
On-line CPU(s) list: 0-63
Vendor ID: GenuineIntel
BIOS Vendor ID: Intel(R) Corporation
Model name: Intel(R) Xeon(R) 6724P
BIOS Model name: Intel(R) Xeon(R) 6724P CPU @ 3.6GHz
BIOS CPU family: 179
CPU family: 6
Model: 173
Thread(s) per core: 2
Core(s) per socket: 16
Socket(s): 2
Stepping: 1
CPU(s) scaling MHz: 36%
CPU max MHz: 4300.0000
CPU min MHz: 800.0000
BogoMIPS: 7200.00
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 aperf mperf tsc_known_freq pn
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_13 cat_12 cdp_13 intel_ppin cdp_12 ssbd mba ibrs ibpb stibp
ibrs_enhanced fsgsbase tsc_adjust bmil hle avx2 smep bmi2 erms
invpcid rtm cqmq rdta avx512f avx512dq rdseed adx smap avx512ifma
clflushopt clwb intel_pt avx512cd sha_ni avx512bw avx512vl xsaveopt
xsavec xgetbv1 xsaves cqmq_llc cqmq_occup_llc cqmq_mbm_total
cqmq_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 avx512vmbi umip pku ospke waitpkg avx512_vmbi2 gfni vaes
vpclmulqdq avx512_vnni avx512_bitalg tme avx512_vpocndq la57 rdpid
bus_lock_detect cldemote movdir64b enqcmd fsrm md_clear
serialize tsxldtrk pconfig arch_lbr ibt amx_bf16 avx512_fp16 amx_tile
amx_int8 flush_lld arch_capabilities
L1d cache: 1.5 MiB (32 instances)
L1i cache: 2 MiB (32 instances)
L2 cache: 64 MiB (32 instances)
L3 cache: 144 MiB (2 instances)
NUMA node(s): 2
NUMA node0 CPU(s): 0-15,32-47
NUMA node1 CPU(s): 16-31,48-63
Vulnerability Gather data sampling: Not affected
Vulnerability Itlb multihit: Not affected
```

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## Platform Notes (Continued)

Vulnerability Llftf:	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; PBRSB-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	72M	144M	16	Unified	3	73728	1	64

-----  
8. numactl --hardware

NOTE: a numactl 'node' might or might not correspond to a physical chip.  
available: 2 nodes (0-1)  
node 0 cpus: 0-15,32-47  
node 0 size: 515268 MB  
node 0 free: 513141 MB  
node 1 cpus: 16-31,48-63  
node 1 size: 516027 MB  
node 1 free: 514081 MB  
node distances:  
node 0 1  
0: 10 21  
1: 21 10

-----  
9. /proc/meminfo  
MemTotal: 1056047452 kB

-----  
10. who -r  
run-level 3 May 22 01:57

-----  
11. Systemd service manager version: systemd 254 (254.10+suse.84.ge8d77af424)  
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  
issue-generator kbdsettings klog lvm2-monitor nsqd postfix purge-kernels rollback rsyslog  
sep5 smartd sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6  
wickedd-nanny  
enabled-runtime systemd-remount-fs  
disabled autofs autoyast-initscripts blk-availability boot-sysctl ca-certificates chrony-wait  
chronyd console-getty cups cups-browsed debug-shell ebttables exchange-bmc-os-info  
firewalld fsidd gpm grub2-once haveged ipmi ipmievfd issue-add-ssh-keys kexec-load lunmask

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## Platform Notes (Continued)

```
man-db-create multipathd nfs nfs-blkmap rpcbind rpmconfigcheck rsyncd serial-getty@  
smartd_generate_opts snmpd snmptrapd systemd-boot-check-no-failures systemd-context  
systemd-network-generator systemd-sysext systemd-time-wait-sync systemd-timesyncd tuned  
udisks2 vncserver@  
indirect systemd-userdbd wickedd
```

```
-----  
13. Linux kernel boot-time arguments, from /proc/cmdline  
BOOT_IMAGE=/boot/vmlinuz-6.4.0-150600.21-default  
root=UUID=52f44b73-418f-485e-ab11-6b40f358d6a0  
splash=silent  
mitigations=auto  
quiet  
security=apparmor
```

```
-----  
14. cpupower frequency-info  
analyzing CPU 61:  
    current policy: frequency should be within 800 MHz and 4.30 GHz.  
        The governor "performance" may decide which speed to use  
        within this range.  
    boost state support:  
        Supported: yes  
        Active: yes
```

```
-----  
15. tuned-adm active  
Current active profile: latency-performance
```

```
-----  
16. sysctl  
kernel.numa_balancing          1  
kernel.randomize_va_space      2  
vm.compaction_proactiveness   20  
vm.dirty_background_bytes     0  
vm.dirty_background_ratio     3  
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                 10  
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
```

(Continued on next page)



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## Platform Notes (Continued)

```
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/sdc2	xfs	445G	54G	391G	13%	/

---

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

Vendor:	Cisco Systems Inc
Product:	UCSC-C240-M8SX
Serial:	WZP28449MSW

---

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:

```
16x 0xCE00 M321R8GA0PB2-CCPEC 64 GB 2 rank 6400
```

---

23. BIOS

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

BIOS Vendor:	Cisco Systems, Inc.
BIOS Version:	C240M8.4.3.6a.0.0319250402
BIOS Date:	03/19/2025
BIOS Revision:	5.35

## Compiler Version Notes

---

```
=====
C           | 519.lbm_r(base) 538.imagick_r(base) 544.nab_r(base)
=====
```

---

```
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
=====
```

---

```
=====
C++         | 508.namd_r(base) 510.parest_r(base)
=====
```

---

```
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.
=====
```

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## Compiler Version Notes (Continued)

=====

C++, C | 511.povray\_r(base) 526.blender\_r(base)

-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.

-----

=====

C++, C, Fortran | 507.cactusBSSN\_r(base)

-----

Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.  
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.

-----

=====

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

-----

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.

-----

=====

Fortran, C | 521.wrf\_r(base) 527.cam4\_r(base)

-----

Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2025.1.1 Build 20250418  
Copyright (C) 1985-2025 Intel Corporation. All rights reserved.

-----

## 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

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Cisco UCS C240 M8 (Intel Xeon 6724P 3.6 GHz processor)

SPECrate®2017\_fp\_base = 543

SPECrate®2017\_fp\_peak = Not Run

CPU2017 License: 9019

Test Sponsor: Cisco Systems

Tested by: Cisco Systems

Test Date: May-2025

Hardware Availability: Feb-2025

Software Availability: Mar-2025

## Base Compiler Invocation (Continued)

Benchmarks using Fortran, C, and C++:

icpx icx ifx

## Base Portability Flags

```
503.bwaves_r: -DSPEC_LP64
507.cactusBSSN_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/home/cpu2017/je5.0.1-64
```

C++ benchmarks:

```
-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/home/cpu2017/je5.0.1-64
```

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/home/cpu2017/je5.0.1-64
```

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
```

(Continued on next page)



# SPEC CPU®2017 Floating Point Rate Result

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## Cisco Systems

Cisco UCS C240 M8 (Intel Xeon 6724P 3.6 GHz processor)

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

```
-Wno-implicit-int -mprefer-vector-width=512 -nostandard-realloc-lhs  
-align array32byte -auto -ljemalloc -L/home/cpu2017/je5.0.1-64
```

Benchmarks using both C and C++:

```
-w -std=c++14 -m64 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast  
-ffast-math -futo -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512  
-ljemalloc -L/home/cpu2017/je5.0.1-64
```

Benchmarks using Fortran, C, and C++:

```
-w -m64 -std=c++14 -std=c11 -Wl,-z,muldefs -xgraniterapids -Ofast  
-ffast-math -futo -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -Wno-implicit-int -mprefer-vector-width=512  
-nostandard-realloc-lhs -align array32byte -auto -ljemalloc  
-L/home/cpu2017/je5.0.1-64
```

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

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.2025-06-17.html>  
<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.2-GNR-revE.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2024-official-linux64.2025-06-17.xml>  
<http://www.spec.org/cpu2017/flags/Cisco-Platform-Settings-V1.2-GNR-revE.xml>

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