



# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

## Esconet Technologies Ltd.

Hexadata HDR-RM2386212I Ver: RLX  
(Intel Xeon E-2436)

SPECspeed®2017\_fp\_base = 71.1

SPECspeed®2017\_fp\_peak = 71.1

CPU2017 License: 6523

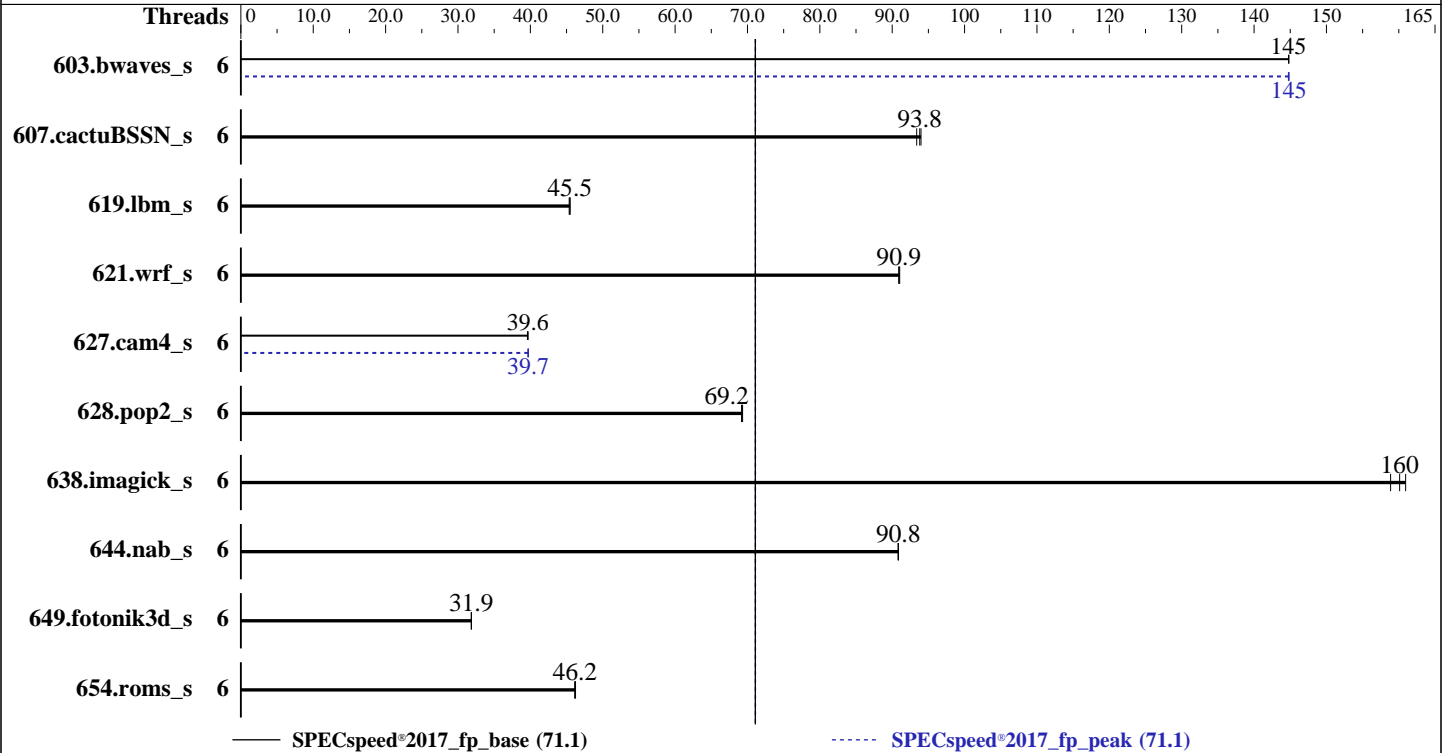
Test Sponsor: Esconet Technologies Ltd.

Tested by: Esconet Technologies Ltd.

Test Date: Feb-2025

Hardware Availability: May-2024

Software Availability: Jun-2024



### Hardware

CPU Name: Intel Xeon E-2436  
 Max MHz: 5000  
 Nominal: 2900  
 Enabled: 6 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: 18 MB I+D on chip per chip  
 Other: None  
 Memory: 128 GB (4 x 32 GB 2Rx8 PC5-4800B-E, running at 4400)  
 Storage: 1 x 1920 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 2023.2.3 of Intel oneAPI DPC++/C++ Compiler for Linux;  
 Fortran: Version 2023.2.3 of Intel Fortran Compiler for Linux;  
 Parallel: Yes  
 Firmware: Version 1.19 released Jan-2024  
 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: OS and BIOS set to prefer performance at the cost of additional power usage.



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## Results Table

| Benchmark       | Base    |             |             |            |             |            |            | Peak    |             |             |            |             |         |       |
|-----------------|---------|-------------|-------------|------------|-------------|------------|------------|---------|-------------|-------------|------------|-------------|---------|-------|
|                 | Threads | Seconds     | Ratio       | Seconds    | Ratio       | Seconds    | Ratio      | Threads | Seconds     | Ratio       | Seconds    | Ratio       | Seconds | Ratio |
| 603.bwaves_s    | 6       | 408         | 145         | 407        | 145         | <b>408</b> | <b>145</b> | 6       | 408         | 145         | <b>407</b> | <b>145</b>  | 407     | 145   |
| 607.cactuBSSN_s | 6       | 179         | 93.4        | <b>178</b> | <b>93.8</b> | 177        | 94.0       | 6       | 179         | 93.4        | <b>178</b> | <b>93.8</b> | 177     | 94.0  |
| 619.lbm_s       | 6       | <b>115</b>  | <b>45.5</b> | 115        | 45.4        | 115        | 45.5       | 6       | <b>115</b>  | <b>45.5</b> | 115        | 45.4        | 115     | 45.5  |
| 621.wrf_s       | 6       | <b>145</b>  | <b>90.9</b> | 145        | 91.0        | 145        | 90.9       | 6       | <b>145</b>  | <b>90.9</b> | 145        | 91.0        | 145     | 90.9  |
| 627.cam4_s      | 6       | <b>224</b>  | <b>39.6</b> | 224        | 39.6        | 223        | 39.7       | 6       | 223         | 39.7        | <b>223</b> | <b>39.7</b> | 223     | 39.7  |
| 628.pop2_s      | 6       | 171         | 69.3        | <b>172</b> | <b>69.2</b> | 172        | 69.2       | 6       | 171         | 69.3        | <b>172</b> | <b>69.2</b> | 172     | 69.2  |
| 638.imagick_s   | 6       | <b>90.1</b> | <b>160</b>  | 89.6       | 161         | 90.8       | 159        | 6       | <b>90.1</b> | <b>160</b>  | 89.6       | 161         | 90.8    | 159   |
| 644.nab_s       | 6       | 192         | 90.8        | <b>192</b> | <b>90.8</b> | 192        | 90.8       | 6       | 192         | 90.8        | <b>192</b> | <b>90.8</b> | 192     | 90.8  |
| 649.fotonik3d_s | 6       | 286         | 31.8        | <b>286</b> | <b>31.9</b> | 286        | 31.9       | 6       | 286         | 31.8        | <b>286</b> | <b>31.9</b> | 286     | 31.9  |
| 654.roms_s      | 6       | 340         | 46.2        | <b>341</b> | <b>46.2</b> | 341        | 46.1       | 6       | 340         | 46.2        | <b>341</b> | <b>46.2</b> | 341     | 46.1  |

SPECspeed®2017\_fp\_base = 71.1

SPECspeed®2017\_fp\_peak = 71.1

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"  
OS set to performance mode via cpupower frequency-set -g performance

## Environment Variables Notes

Environment variables set by runcpu before the start of the run:  
KMP\_AFFINITY = "granularity=fine,compact,1,0"  
LD\_LIBRARY\_PATH = "/home/cpul7/lib/intel64:/home/cpul7/je5.0.1-64"  
MALLOCONF = "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  
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  
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.



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## Platform Notes

BIOS Configuration:

VT-d = Disabled  
CPU C States Support = Disabled  
AES = Disabled  
Intel (VMX) Virtualization Technology = Disabled  
DRAM frequency = DDR5-4400 (4400MHz)  
SATA Controller ALPM = Disabled

Sysinfo program /home/cpu17/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost Mon Feb 24 16:00:03 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. sysctl
16. /sys/kernel/mm/transparent\_hugepage
17. /sys/kernel/mm/transparent\_hugepage/khugepaged
18. OS release
19. Disk information
20. /sys/devices/virtual/dmi/id
21. dmidecode
22. BIOS

-----  
1. uname -a  
Linux localhost 6.4.0-150600.21-default #1 SMP PREEMPT\_DYNAMIC Thu May 16 11:09:22 UTC 2024 (36cle09)  
x86\_64 x86\_64 x86\_64 GNU/Linux  
-----

2. w  
16:00:03 up 17:16, 1 user, load average: 2.67, 4.88, 3.46  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 - Sun23 3:29m 0.74s 0.00s sh  
reportable-ic2023.2.3-lin-core-avx2-speed-smt-on-20231121.sh  
-----

3. Username  
From environment variable \$USER: root  
-----

4. ulimit -a  
core file size (blocks, -c) unlimited  
-----

(Continued on next page)



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### Platform Notes (Continued)

```

data seg size      (kbytes, -d) unlimited
scheduling priority (-e) 0
file size          (blocks, -f) unlimited
pending signals    (-i) 512949
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) 512949
virtual memory     (kbytes, -v) unlimited
file locks         (-x) unlimited

```

```

-----
5. sysinfo process ancestry
/usr/lib/systemd/systemd --switched-root --system --deserialize=31
login -- root
-bash
sh reportable-ic2023.2.3-lin-core-avx2-speed-smt-on-20231121.sh
runcpu --nobuild --action validate --define default-platform-flags -c
  ic2023.2.3-lin-core-avx2-speed-20231121.cfg --define cores=6 --tune base,peak -o all --define smt-on
  --define drop_caches fpspeed
runcpu --nobuild --action validate --define default-platform-flags --configfile
  ic2023.2.3-lin-core-avx2-speed-20231121.cfg --define cores=6 --tune base,peak --output_format all --define
  smt-on --define drop_caches --nopower --runmode speed --tune base:peak --size refspeed fpspeed --nopreenv
  --note-preenv --logfile $SPEC/tmp/CPU2017.004/templogs/preenv.fpspeed.004.0.log --lognum 004.0
  --from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /home/cpul7

```

```

-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) E E-2436
vendor_id      : GenuineIntel
cpu family     : 6
model          : 183
stepping       : 1
microcode      : 0x122
bugs           : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
cpu cores      : 6
siblings       : 12
1 physical ids (chips)
12 processors (hardware threads)
physical id 0: core ids 0-5
physical id 0: apicids 0-11
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):                12

```

(Continued on next page)



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### Platform Notes (Continued)

```

On-line CPU(s) list:          0-11
Vendor ID:                   GenuineIntel
BIOS Vendor ID:              Intel(R) Corporation
Model name:                   Intel(R) Xeon(R) E E-2436
BIOS Model name:             Intel(R) Xeon(R) E E-2436 To Be Filled By O.E.M. CPU @ 4.3GHz
BIOS CPU family:             179
CPU family:                   6
Model:                        183
Thread(s) per core:          2
Core(s) per socket:          6
Socket(s):                    1
Stepping:                     1
Frequency boost:              enabled
CPU(s) scaling MHz:          134%
CPU max MHz:                  2901.0000
CPU min MHz:                  800.0000
BogoMIPS:                     5836.80
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 sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer xsave avx
                             f16c rdrand lahf_lm abm 3dnowprefetch cpuid_fault epb ssbd ibrs ibpb
                             stibp ibrs_enhanced 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 umip pku ospke waitpkg gfni vplmulqdq tme rdpid
                             movdiri movdir64b fsrm md_clear serialize pconfig arch_lbr ibt
                             flush_lld arch_capabilities
L1d cache:                   288 KiB (6 instances)
L1i cache:                   192 KiB (6 instances)
L2 cache:                     12 MiB (6 instances)
L3 cache:                     18 MiB (1 instance)
NUMA node(s):                1
NUMA node0 CPU(s):           0-11
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 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      | 288K     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 32K      | 192K     | 8    | Instruction | 1     | 64    | 1        | 64             |
| L2   | 2M       | 12M      | 16   | Unified     | 2     | 2048  | 1        | 64             |
| L3   | 18M      | 18M      | 9    | Unified     | 3     | 32768 | 1        | 64             |

(Continued on next page)



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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: 0-11
node 0 size: 128262 MB
node 0 free: 101447 MB
node distances:
node 0
0: 10
```

9. /proc/meminfo

```
MemTotal: 131340892 kB
```

10. who -r

```
run-level 3 Feb 23 22:44
```

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 apparmor auditd cron firewalld getty@ irqbalance issue-generator kbdsettings kdump
kdump-early kdump-notify postfix purge-kernels rollback sshd systemd-pstore wicked
wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6 wickedd-nanny
enabled-runtime systemd-remount-fs
disabled boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell ebttables fsidd
grub2-once haveged issue-add-ssh-keys kexec-load lunmask nfs nfs-blkmap rpcbind
rpmconfigcheck serial-getty@ systemd-boot-check-no-failures systemd-confext
systemd-network-generator systemd-sysexit systemd-time-wait-sync systemd-timesyncd
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=0d9e72ce-443d-4279-9cbd-11b76fe0fa66
splash=silent
resume=/dev/disk/by-uuid/3a60289d-c070-402f-bb86-52386ad57a3d
mitigations=auto
quiet
security=apparmor
crashkernel=342M,high
crashkernel=72M,low
```

14. cpupower frequency-info

```
analyzing CPU 0:
current policy: frequency should be within 800 MHz and 2.90 GHz.
The governor "performance" may decide which speed to use
within this range.

boost state support:
Supported: yes
Active: yes
```

15. sysctl

(Continued on next page)



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### Platform Notes (Continued)

```

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

```

```

-----
16. /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

```

```

-----
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 SP6

```

```

-----
19. Disk information
SPEC is set to: /home/cpu17
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/sda3       xfs   728G  39G  689G  6% /home

```

```

-----
20. /sys/devices/virtual/dmi/id
Vendor:         HEXADATA
Product:        HDR-RM2386212I
Serial:         H5FSYR003208

```

```

-----
21. 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.

```

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## Platform Notes (Continued)

Memory:

4x V-Color Technology Inc TE532G48D840 32 GB 2 rank 4800, configured at 4400

### 22. BIOS

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

BIOS Vendor: American Megatrends International, LLC.  
BIOS Version: 1.19  
BIOS Date: 01/05/2024  
BIOS Revision: 5.27

## 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 2023.2.3 Build x  
Copyright (C) 1985-2023 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 2023.2.3 Build x  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) Fortran Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x  
Copyright (C) 1985-2023 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 2023.2.3 Build x  
Copyright (C) 1985-2023 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 2023.2.3 Build x  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.  
Intel(R) oneAPI DPC++/C++ Compiler for applications running on Intel(R) 64, Version 2023.2.3 Build x  
Copyright (C) 1985-2023 Intel Corporation. All rights reserved.

## Base Compiler Invocation

C benchmarks:

icx

Fortran benchmarks:

ifx

(Continued on next page)





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## Base Compiler Invocation (Continued)

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 -xCORE-AVX2 -Ofast -ffast-math
-flto -mfpmath=sse -funroll-loops -qopt-mem-layout-trans=4 -fiopenmp
-DSPEC_OPENMP -Wno-implicit-int -L/usr/local/jemalloc64-5.0.1/lib
-ljemalloc
```

Fortran benchmarks:

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

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# SPEC CPU®2017 Floating Point Speed Result

Copyright 2017-2025 Standard Performance Evaluation Corporation

**Esconet Technologies Ltd.**

Hexadata HDR-RM2386212I Ver: RLX  
(Intel Xeon E-2436)

SPECspeed®2017\_fp\_base = 71.1

SPECspeed®2017\_fp\_peak = 71.1

**CPU2017 License:** 6523

**Test Sponsor:** Esconet Technologies Ltd.

**Tested by:** Esconet Technologies Ltd.

**Test Date:** Feb-2025

**Hardware Availability:** May-2024

**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 -fiopenmp -DSPEC_OPENMP -Wno-implicit-int
-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

644.nab\_s: basepeak = yes

Fortran benchmarks:

```
603.bwaves_s: -w -m64 -Wl,-z,muldefs -DSPEC_OPENMP -xCORE-AVX2 -Ofast
-ffast-math -flto -mfpmath=sse -funroll-loops
-qopt-mem-layout-trans=4 -fiopenmp -nostandard-realloc-lhs
```

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## Peak Optimization Flags (Continued)

603.bwaves\_s (continued):

```
-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 -xCORE-AVX2 -Ofast  
-ffast-math -flto -mfpmath=sse -funroll-loops  
-qopt-mem-layout-trans=4 -fiopenmp -DSPEC_OPENMP  
-Wno-implicit-int -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-ic2023p2-official-linux64.html>

<http://www.spec.org/cpu2017/flags/Hexadata-Platform-Flags-Intel-rev1.7.html>

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

<http://www.spec.org/cpu2017/flags/Intel-ic2023p2-official-linux64.xml>

<http://www.spec.org/cpu2017/flags/Hexadata-Platform-Flags-Intel-rev1.7.xml>

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