



# SPEC CPU®2017 Floating Point Speed Result

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Esconet Technologies Ltd.

Hexadata HD-RS4100 Ver: SPR-001  
(Intel Xeon Silver 4410Y, 2.0 GHz)

SPECspeed®2017\_fp\_base = 122

SPECspeed®2017\_fp\_peak = 122

CPU2017 License: 6523

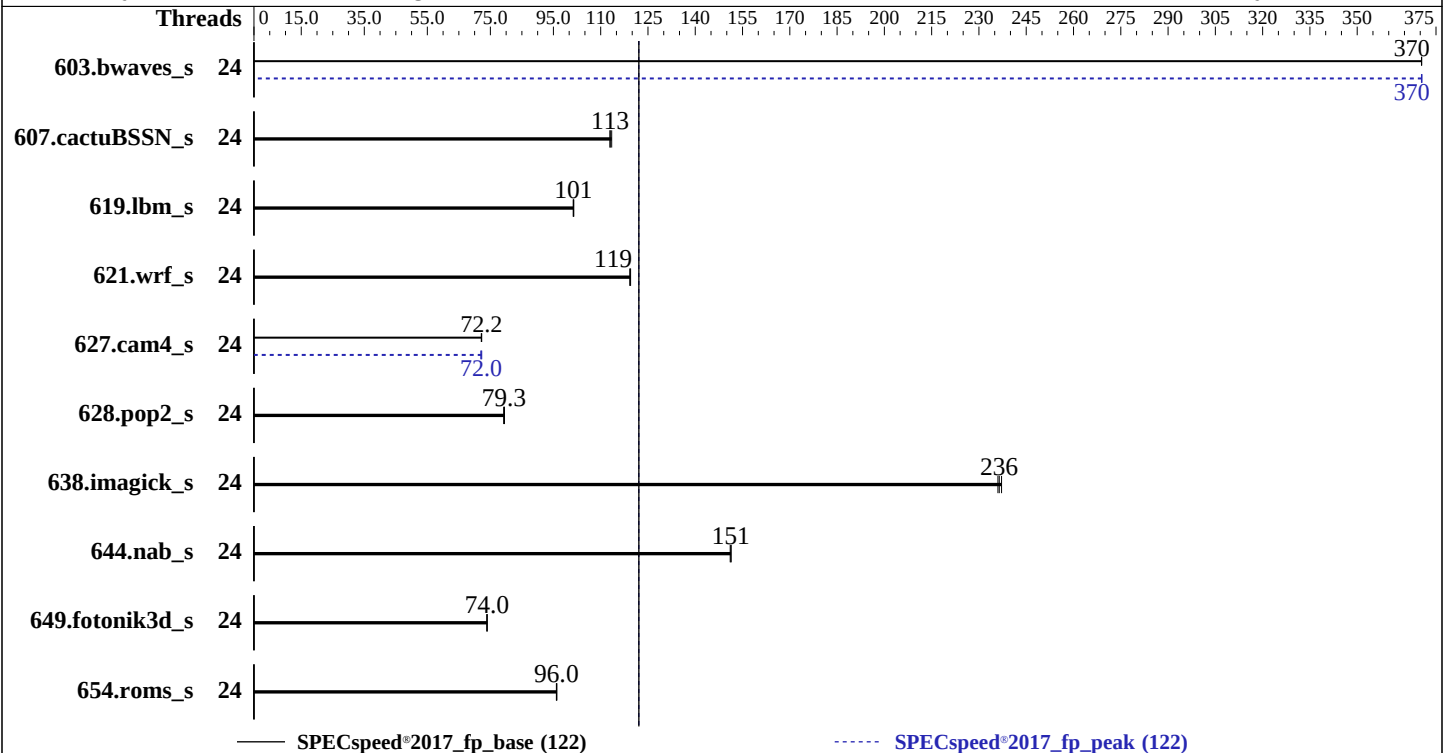
Test Sponsor: Esconet Technologies Ltd.

Tested by: Esconet Technologies Ltd.

Test Date: May-2025

Hardware Availability: Mar-2023

Software Availability: Jun-2024



## Hardware

CPU Name: Intel Xeon Silver 4410Y  
Max MHz: 3900  
Nominal: 2000  
Enabled: 12 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: 30 MB I+D on chip per chip  
Other: None  
Memory: 256 GB (8 x 32 GB 1Rx4 PC5-5600B-R, running at 4000)  
Storage: 50 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 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 1.26 released Apr-2023  
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: 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    | 24      | 159         | 370         | <u>159</u>  | <u>370</u>  | 159        | 370         | 24      | 159         | 370         | <u>159</u>  | <u>370</u>  | 159        | 371         |
| 607.cactuBSSN_s | 24      | 148         | 113         | <u>147</u>  | <u>113</u>  | 147        | 113         | 24      | 148         | 113         | <u>147</u>  | <u>113</u>  | 147        | 113         |
| 619.lbm_s       | 24      | 51.7        | 101         | <u>51.7</u> | <u>101</u>  | 51.6       | 101         | 24      | 51.7        | 101         | <u>51.7</u> | <u>101</u>  | 51.6       | 101         |
| 621.wrf_s       | 24      | 111         | 119         | 111         | 119         | <u>111</u> | <u>119</u>  | 24      | 111         | 119         | 111         | 119         | <u>111</u> | <u>119</u>  |
| 627.cam4_s      | 24      | 123         | 72.1        | <u>123</u>  | <u>72.2</u> | 123        | 72.2        | 24      | 123         | 72.0        | 123         | 72.3        | <u>123</u> | <u>72.0</u> |
| 628.pop2_s      | 24      | 150         | 79.2        | <u>150</u>  | <u>79.3</u> | 149        | 79.5        | 24      | 150         | 79.2        | <u>150</u>  | <u>79.3</u> | 149        | 79.5        |
| 638.imagick_s   | 24      | <u>61.0</u> | <u>236</u>  | 61.1        | 236         | 60.8       | 237         | 24      | <u>61.0</u> | <u>236</u>  | 61.1        | 236         | 60.8       | 237         |
| 644.nab_s       | 24      | 115         | 151         | 116         | 151         | <u>115</u> | <u>151</u>  | 24      | 115         | 151         | 116         | 151         | <u>115</u> | <u>151</u>  |
| 649.fotonik3d_s | 24      | 123         | 73.9        | 123         | 74.0        | <u>123</u> | <u>74.0</u> | 24      | 123         | 73.9        | 123         | 74.0        | <u>123</u> | <u>74.0</u> |
| 654.roms_s      | 24      | <u>164</u>  | <u>96.0</u> | 164         | 96.1        | 164        | 96.0        | 24      | <u>164</u>  | <u>96.0</u> | 164         | 96.1        | 164        | 96.0        |

SPECspeed®2017\_fp\_base = 122

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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,1,0"

LD\_LIBRARY\_PATH = "/mnt/ramdisk/cpu17/lib/intel64:/mnt/ramdisk/cpu17/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

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.

Benchmark run from a 50 GB ramdisk created with the cmd: "mount -t tmpfs -o size=50G tmpfs /mnt/ramdisk"



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## Platform Notes

BIOS settings: Default

Sysinfo program /mnt/ramdisk/cpu17/bin/sysinfo  
Rev: r6732 of 2022-11-07 fe91c89b7ed5c36ae2c92cc097bec197  
running on localhost Mon May 5 17:47:18 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 (36c1e09)  
x86\_64 x86\_64 x86\_64 GNU/Linux

2. w  
17:47:18 up 3:41, 1 user, load average: 5.36, 6.62, 4.10  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
root tty1 - 14:15 3:29m 0.88s 0.00s sh  
reportable-ic2023.2.3-lin-sapphirerapids-speed-smt-on-20231121.sh

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) 1027800  
max locked memory (kbytes, -l) 8192

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## Platform Notes (Continued)

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) 1027800  
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-sapphirerapids-speed-smt-on-20231121.sh
runcpu --nobuild --action validate --define default-platform-flags -c
ic2023.2.3-lin-sapphirerapids-speed-20231121.cfg --define cores=24 --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-sapphirerapids-speed-20231121.cfg --define cores=24 --tune base,peak --output_format all
--define smt-on --define drop_caches --nopower --runmode speed --tune base:peak --size refspeak fpspeed
--nopreenv --note-preenv --logfile $SPEC/tmp/CPU2017.002/temlogs/preenv.fpspeed.002.0.log --lognum 002.0
--from_runcpu 2
specperl $SPEC/bin/sysinfo
$SPEC = /mnt/ramdisk/cpu17
-----
```

```
-----
6. /proc/cpuinfo
model name      : Intel(R) Xeon(R) Silver 4410Y
vendor_id       : GenuineIntel
cpu family      : 6
model           : 143
stepping        : 8
microcode       : 0x2b000590
bugs            : spectre_v1 spectre_v2 spec_store_bypass swapgs eibrs_pbrsb bhi
cpu cores       : 12
siblings        : 24
1 physical ids (chips)
24 processors (hardware threads)
physical id 0:  core ids 0-11
physical id 0:  apicids 0-23
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:       | 52 bits physical, 57 bits virtual          |
| Byte Order:          | Little Endian                              |
| CPU(s):              | 24                                         |
| On-line CPU(s) list: | 0-23                                       |
| Vendor ID:           | GenuineIntel                               |
| BIOS Vendor ID:      | Intel(R) Corporation                       |
| Model name:          | Intel(R) Xeon(R) Silver 4410Y              |
| BIOS Model name:     | Intel(R) Xeon(R) Silver 4410Y CPU @ 2.0GHz |

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## Platform Notes (Continued)

BIOS CPU family: 179  
CPU family: 6  
Model: 143  
Thread(s) per core: 2  
Core(s) per socket: 12  
Socket(s): 1  
Stepping: 8  
CPU(s) scaling MHz: 42%  
CPU max MHz: 3900.0000  
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 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 hle avx2 smep bmi2 erms invpcid  
rtm 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 hfi vnmi  
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  
Virtualization: VT-x  
L1d cache: 576 KiB (12 instances)  
L1i cache: 384 KiB (12 instances)  
L2 cache: 24 MiB (12 instances)  
L3 cache: 30 MiB (1 instance)  
NUMA node(s): 1  
NUMA node0 CPU(s): 0-23  
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;  
PBRB-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      | 576K     | 12   | Data        | 1     | 64    | 1        | 64             |
| L1i  | 32K      | 384K     | 8    | Instruction | 1     | 64    | 1        | 64             |
| L2   | 2M       | 24M      | 16   | Unified     | 2     | 2048  | 1        | 64             |
| L3   | 30M      | 30M      | 15   | Unified     | 3     | 32768 | 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: 0-23
node 0 size: 256976 MB
node 0 free: 244521 MB
node distances:
node 0
0: 10
```

9. /proc/meminfo

MemTotal: 263143768 kB

10. who -r

run-level 3 May 5 14:06

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<br>kdump-early kdump-notify nvme-fc-boot-connections nvme-fc-autoconnect postfix purge-kernels<br>rollback sshd systemd-pstore wicked wickedd-auto4 wickedd-dhcp4 wickedd-dhcp6<br>wickedd-nanny                                                              |
| enabled-runtime | systemd-remount-fs                                                                                                                                                                                                                                                                                                                               |
| disabled        | boot-sysctl ca-certificates chrony-wait chronyd console-getty debug-shell ebttables fsidd<br>grub2-once haveged issue-add-ssh-keys kexec-load lunmask nfs nfs-blkmap rpcbind<br>rpmconfigcheck serial-getty@ systemd-boot-check-no-failures systemd-confext<br>systemd-network-generator systemd-sysext 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=e40d4a6f-b67a-430a-86f1-3d3ea26a7eb1
splash=silent
resume=/dev/disk/by-uuid/767864c6-130c-4bba-bf53-bf715ee2aa3c
mitigations=auto
quiet
security=apparmor
crashkernel=355M,high
crashkernel=72M,low
```

14. cpupower frequency-info

analyzing CPU 21:  
current policy: frequency should be within 800 MHz and 3.90 GHz.  
The governor "performance" may decide which speed to use within this range.

boost state support:

Supported: yes  
Active: yes

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## Platform Notes (Continued)

```
-----
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                    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: /mnt/ramdisk/cpu17
Filesystem      Type  Size  Used Avail Use% Mounted on
tmpfs            tmpfs  50G   11G   40G   21% /mnt/ramdisk

-----
20. /sys/devices/virtual/dmi/id
Vendor:          HEXADATA
Product:         HD-RS4100

-----
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
```

(Continued on next page)





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## Platform Notes (Continued)

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

Memory:

8x Hynix TR532G56S446 32 GB 1 rank 5600, configured at 4000

### 22. BIOS

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

BIOS Vendor: American Megatrends International, LLC.

BIOS Version: 1.26

BIOS Date: 04/17/2023

BIOS Revision: 5.29

## 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  
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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  
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=====

## Base Compiler Invocation

C benchmarks:

icx

(Continued on next page)





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**CPU2017 License:** 6523

**Test Sponsor:** Esconet Technologies Ltd.

**Tested by:** Esconet Technologies Ltd.

**Test Date:** May-2025

**Hardware Availability:** Mar-2023

**Software Availability:** Jun-2024

## Base Compiler Invocation (Continued)

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 -xsapphirerapids -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 -xsapphirerapids -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 -xsapphirerapids -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

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# SPEC CPU®2017 Floating Point Speed Result

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Esconet Technologies Ltd.

Hexadata HD-RS4100 Ver: SPR-001  
(Intel Xeon Silver 4410Y, 2.0 GHz)

SPECspeed®2017\_fp\_base = 122

SPECspeed®2017\_fp\_peak = 122

CPU2017 License: 6523

Test Sponsor: Esconet Technologies Ltd.

Tested by: Esconet Technologies Ltd.

Test Date: May-2025

Hardware Availability: Mar-2023

Software Availability: Jun-2024

## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C (continued):

-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 -xsaphirerapids -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

644.nab\_s: basepeak = yes

Fortran benchmarks:

(Continued on next page)



# SPEC CPU®2017 Floating Point Speed Result

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Hexadata HD-RS4100 Ver: SPR-001  
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SPECspeed®2017\_fp\_base = 122

SPECspeed®2017\_fp\_peak = 122

CPU2017 License: 6523

Test Sponsor: Esconet Technologies Ltd.

Tested by: Esconet Technologies Ltd.

Test Date: May-2025

Hardware Availability: Mar-2023

Software Availability: Jun-2024

## Peak Optimization Flags (Continued)

603.bwaves\_s: -w -m64 -WL, -z, muldefs -DSPEC\_OPENMP -xsaphirerapids  
-Ofast -ffast-math -fltto -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 -xsaphirerapids -Ofast  
-ffast-math -fltto -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-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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