



COMPUTE SANITIZER

v2020.1.0 | May 2020

Release Notes



TABLE OF CONTENTS

Chapter 1. Release Notes.....	1
1.1. Updates in 2020.1.....	1
1.2. Updates in 2019.1.....	1
Chapter 2. Known Limitations.....	2
Chapter 3. Known Issues.....	3
Chapter 4. Support.....	4
4.1. Platform Support.....	4
4.2. GPU Support.....	4

LIST OF TABLES

Table 1	Platforms supported by Compute Sanitizer	4
Table 2	GPU architectures supported by Compute Sanitizer	4

Chapter 1.

RELEASE NOTES

1.1. Updates in 2020.1

- ▶ Initial release of the Compute Sanitizer (with CUDA 11.0)

Updates to the Sanitizer API :

- ▶ Added support for per-thread streams
- ▶ Added APIs to retrieve the PC and size of a CUDA function or patch
- ▶ Added callback for `cudaStreamAttachMemAsync`
- ▶ Added direction to `memcpy` callback data
- ▶ Added stream to `memcpy` and `memset` callbacks data
- ▶ Added launch callback after syscall setup
- ▶ Added visibility field to allocation callback data
- ▶ Added PC argument to block entry callback
- ▶ Added incoming value to memory access callbacks
- ▶ Added `threadCount` to barrier callbacks
- ▶ Added cooperative group flags for barrier and function callbacks

1.2. Updates in 2019.1

- ▶ Initial release of the Compute Sanitizer API (with CUDA 10.1)

Chapter 2.

KNOWN LIMITATIONS

- ▶ Applications run much slower under the Compute Sanitizer tools. This may cause some kernel launches to fail with a launch timeout error when running with the Compute Sanitizer enabled.
- ▶ Compute Sanitizer tools do not support device backtrace on Maxwell devices (SM 5.x).
- ▶ Compute Sanitizer tools do not support CUDA/Direct3D interop.
- ▶ Compute Sanitizer tools do not support CUDA/Vulkan interop.
- ▶ The memcheck tool does not support CUDA API error checking for API calls made on the GPU using dynamic parallelism.
- ▶ The racecheck, synccheck and initcheck tools do not support CUDA dynamic parallelism.
- ▶ Compute Sanitizer tools do not support OptiX.
- ▶ Compute Sanitizer does not track child processes spawned by the application launched under the tool.
- ▶ Compute Sanitizer tools cannot interoperate with other CUDA developer tools.

Chapter 3.

KNOWN ISSUES

- ▶ On SM 7.0 and above, the racecheck tool does not fully support warp synchronization instructions with a partial thread mask. If such an instruction is encountered, it is handled as if the mask would have been full (i.e., 0xffffffff). As a result, checking can be too conservative at times and some potential intra-warp hazards will not be detected.
- ▶ With some versions of Windows Server 2016, programs built with some configurations might hang when used with the Compute Sanitizer. A workaround for this issue is to use the Computer Sanitizer with **--show-backtrace device** or **--show-backtrace no** options.

Chapter 4.

SUPPORT

Information on supported platforms and GPUs.

4.1. Platform Support

Table 1 Platforms supported by Compute Sanitizer

Platform	Support
Windows	Yes
Linux (x86_64)	Yes
Linux (ppc64le)	Yes
Linux (aarch64bsa)	Yes
Linux (aarch64)	No
QNX	No
MacOSX	No

4.2. GPU Support

Table 2 GPU architectures supported by Compute Sanitizer

Architecture	Support
Kepler	No
Maxwell	Yes
Pascal	Yes
Volta	Yes
Turing	Yes
Ampere	Yes

Notice

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS, AND OTHER DOCUMENTS (TOGETHER AND SEPARATELY, "MATERIALS") ARE BEING PROVIDED "AS IS." NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY, OR OTHERWISE WITH RESPECT TO THE MATERIALS, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Information furnished is believed to be accurate and reliable. However, NVIDIA Corporation assumes no responsibility for the consequences of use of such information or for any infringement of patents or other rights of third parties that may result from its use. No license is granted by implication of otherwise under any patent rights of NVIDIA Corporation. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all other information previously supplied. NVIDIA Corporation products are not authorized as critical components in life support devices or systems without express written approval of NVIDIA Corporation.

Trademarks

NVIDIA and the NVIDIA logo are trademarks or registered trademarks of NVIDIA Corporation in the U.S. and other countries. Other company and product names may be trademarks of the respective companies with which they are associated.

Copyright

© 2019-2020 NVIDIA Corporation. All rights reserved.

This product includes software developed by the Syncro Soft SRL (<http://www.sync.ro/>).