



# NSIGHT COMPUTE

v2019.1.1 | February 2019

## Release Notes



# TABLE OF CONTENTS

- Chapter 1. Release Notes..... 1
  - 1.1. Updates in 2019.1..... 1
- Chapter 2. Known Issues..... 3
- Chapter 3. Support.....4
  - 3.1. Platform Support.....4
  - 3.2. GPU Support..... 5

## LIST OF TABLES

Table 1	Platforms supported by NVIDIA Nsight Compute .....	4
Table 2	GPU architectures supported by NVIDIA Nsight Compute .....	5



# Chapter 1.

## RELEASE NOTES

### 1.1. Updates in 2019.1

#### General

- ▶ Support for CUDA 10.1
- ▶ Improved performance
- ▶ Bug fixes
- ▶ Profiling on Volta GPUs now uses the same metric names as on Turing GPUs
- ▶ Section files support descriptions
- ▶ The default sections and rules directory has been renamed to *sections*

#### NVIDIA Nsight Compute

- ▶ Added new profiling options to the options dialog
- ▶ Details page shows rule result icons in the section headers
- ▶ Section descriptions are shown in the details page and in the sections tool window
- ▶ Source page supports collapsing multiple source files or functions to show aggregated results
- ▶ Source page heatmap color scale has changed
- ▶ Invalid metric results are highlighted in the profiler report
- ▶ Loaded section and rule files can be opened from the sections tool window

#### NVIDIA Nsight Compute CLI

- ▶ Support for profiling child processes on Linux and Windows x86\_64 targets
- ▶ NVIDIA Nsight Compute CLI uses a temporary file if no output file is specified
- ▶ Support for new `--quiet` option
- ▶ Support for setting the GPU clock control mode using new `--clock-control` option
- ▶ Details page output shows the NVTX context when `--nvtx` is enabled
- ▶ Support for filtering kernel launches for profiling based on their NVTX context using new `--nvtx-include` and `--nvtx-exclude` options

- ▶ Added new **--summary** options for aggregating profiling results
- ▶ Added option **--open-in-ui** to open reports collected with NVIDIA Nsight Compute CLI directly in NVIDIA Nsight Compute

### Resolved Issues

- ▶ Installation directory scripts use absolute paths
- ▶ OpenACC kernel names are correctly demangled
- ▶ Profile activity report file supports a relative path
- ▶ Source view can resolve all applicable files at once
- ▶ UI font colors are improved
- ▶ Details page layout and label elision issues are resolved
- ▶ Turing metrics are properly reported on the Summary page
- ▶ All byte-based metrics use a factor of 1000 when scaling units to follow SI standards
- ▶ CSV exports properly align columns with empty entries
- ▶ Fixed the metric computation for `double_precision_fu_utilization` on GV11b
- ▶ Fixed incorrect 'selected' PC sampling counter values
- ▶ The SpeedOfLight section uses 'max' instead of 'avg' cycles metrics for Elapsed Cycles

## Chapter 2. KNOWN ISSUES

- ▶ The Visual Studio 2017 redistributable is not automatically installed by the NVIDIA Nsight Compute installer. The workaround is to install the x64 version of the 'Microsoft Visual C++ Redistributable for Visual Studio 2017' manually. The installer is linked on the main download page for Visual Studio at <https://www.visualstudio.com/downloads/> or download directly from <https://go.microsoft.com/fwlink/?LinkId=746572>.
- ▶ Profiling child processes is only available for x86\_64 Linux and Windows targets. Profiling child processes is only available when using the default `--mode launch-and-attach`, not when launching and attaching from different instances.
- ▶ Launching applications on remote targets/platforms is not supported for several combinations. See [Platform Support](#) for details. Manually launch the application using command line `nv-nsight-cu-cli --mode=launch` on the remote system and connect using the UI or CLI afterwards.
- ▶ Real texture traffic is not captured in *First-Level Cache* table yet. Necessary metrics will be added soon.
- ▶ On platforms other than Windows, NVIDIA Nsight Compute must not be installed in a directory containing spaces or other whitespace characters.
- ▶ On Windows, NVIDIA Nsight Compute CLI can profile at most 63 processes from a single application.

# Chapter 3.

## SUPPORT

Information on supported platforms and GPUs.

### 3.1. Platform Support

Host denotes the UI can run on that platform. Target means that we can instrument applications on that platform for data collection. Applications launched with instrumentation on a target system can be connected to from most host platforms. The reports collected on one system can be opened on any other system.

Table 1 Platforms supported by NVIDIA Nsight Compute

	Host	Targets
Windows x86_64	Yes	Windows x86_64*, Linux x86_64
Linux x86_64	Yes	Windows x86_64*, Linux x86_64
Linux x86_64 (Drive SDK)	Yes	Windows x86_64*, Linux x86_64, DRIVE OS Linux, DRIVE OS QNX
MacOSX 10.13+	Yes	Windows x86_64*, Linux x86_64*
DRIVE OS Linux	No	DRIVE OS Linux
DRIVE OS QNX	No	DRIVE OS QNX

Target platforms marked with \* do not support remote launch from the respective host. Remote launch means that the application can be launched on the target system from the host UI. Instead, the application must be launched from the target system.



## 3.2. GPU Support

Table 2 GPU architectures supported by NVIDIA Nsight Compute

Architecture	Support	Metrics*
Kepler	No	
Maxwell	No	
Pascal GP100	No	
Pascal GP10x	Yes	Group A
Volta GV100	Yes	Group B
Volta GV11b	Yes	Group B
Turing TU10x	Yes	Group B

\* NVIDIA Nsight Compute uses different sets of metric names for the different GPU architectures. This is due to the underlying measurement libraries that are used on those architectures. Within each metric name group (Group A, Group B), names are identical, with the exception of some metrics being only available on some specific architectures. The metrics of Group B are identical to those of the [Perfworks Metrics API](#). A comparison between the metrics used in nvprof and their equivalent in NVIDIA Nsight Compute can be found in the [NVIDIA Nsight Compute CLI User Manual](#).

When using the default sections and rules installed with NVIDIA Nsight Compute, the difference in metric names is handled automatically. When manually selecting metric names for profiling or writing your own sections or rules, the correct metric group must be picked for the respective target architecture.

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