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NVIDIA Data Loading Library (DALI)
NVIDIA NGX makes it easy for you to integrate pre-built AI based features into your applications. NVIDIA will be adding new features and also updating the existing ones over time. When an existing feature is updated, the NGX infrastructure will update the feature on all clients that uses it.

There are three main components that make up the system:

**NGX SDK**
- The NGX SDK provides CUDA and DX11/12 APIs for applications to access the AI features.

**NGX Core Runtime**
- All runtime modules are provided with the NVIDIA Graphics Driver that supports RTX hardware. During an advanced driver installation the module is called NGX Core.

**NGX Update Module**
- This module ensures that NGX integrated applications always use the latest version of the NGX features.
Chapter 2.
NGX RELEASE 1.1.0

These are the release notes for NGX 1.1.0.

Key Features and Enhancements
This NGX release includes the following key features and enhancements.

‣ Support added for the Windows DCH driver

Compatibility
NGX 1.1.0 has been tested with the following:

‣ Drivers: Windows 10 419.35, 421.73 and 430.64 display drivers, Windows DCH and legacy variants
‣ GPUs: Quadro, GeForce and Titan RTX

Using NGX 1.1.0
Ensure you are familiar with the following notes when using this release:

‣ The SloMo and VSR samples use the NVIDIA VIDEO Codec SDK to process the videos. Therefore, all videos must be within the resolutions supported by the RTX hardware. For more information, see Key Features of Video Codec SDK.

Deprecated Features
The following features are deprecated in NGX1.1.0:

‣ NGX updates by GFE and QXP; all updates are now handled by NGX Update Module.
‣ Updates are now driven by the NGX runtime and the Graphics driver.
**Known Issues**

- The provided SDK samples are targeting a Visual Studio 2015 or Visual Studio 2017 install with Windows 10 SDK version 10.0.10586.0. If the Windows 10 SDK version 10.0.10586.0 is not installed on the developer machine, then the Visual Studio environment may ask to retarget to the installed Windows SDK instead. If there’s no prompt from the IDE, then you may have to manually edit the Project files to retarget to an installed version of the Windows 10 SDK in order to compile the sample projects.
This is the first release of NGX.

Key Features and Enhancements

This NGX release includes the following key features and enhancements.

Image Super-Resolution (**nvngx_dlisr.dll**)
- Image Scaling in 2x, 4x or 8x increments. The expected performance of this feature would be measured in seconds per frame, therefore, this version is best suited for still images or offline processing.

Video Super-Resolution (**nvngx_dlvsr.dll**)
- Image Scaling in 2x or 3x increments. The expected performance should be a few milliseconds per frame, therefore, this version is best suited for real-time applications.

InPainting (**nvngx_dlinpainting.dll**)
- Replaces parts of the source image as defined by a monochrome mask. There are two optimization options or models to help guide the inpainting:
  - **Mode 0** is best for landscapes
  - **Mode 1** is a general broad image type

Slow Motion / Frame Insertion (**nvngx_dlslowmo.dll**)
- Takes a pair of frames and generates new frames between them.

Compatibility

This release has been tested on:

- Driver: Windows 10 R410 and R415 display drivers
- GPU: Quadro, GeForce and Titan RTX

Limitations In 1.0.0

- The sample applications do not perform robust checking for file extensions on image or video types and will crash with missing extensions.
The NGX SloMo and NGX VSR sample applications may have issues with certain video types which are not compatible with the FFMPEG version that uses the NVIDIA RTX video decoders. We recommend using one of the formats listed here: [https://developer.nvidia.com/FFmpeg](https://developer.nvidia.com/FFmpeg).

This release does not support the DLSS feature. If you are interested in integrating DLSS into your application, contact [NGXSupport@nvidia.com](mailto:NGXSupport@nvidia.com).

**Using NGX 1.0.0**

Ensure you are familiar with the following notes when using this release.

- The features do not currently scale their performance across multiple GPUs.
- Some of the features can use large amounts of GPU memory. Reducing the input image size will reduce the memory usage.

**Known Issues**

- When installing the NGX SDK in the default location on a system that has never had an NVIDIA GPU in it, the sample applications may not compile correctly. To work around this issue, either install the SDK into a different location or change the security permissions on `%programdata%\NVIDIA Corporation` to allow the local user full control.

- If the NGX SDK is installed on a machine that has CUDA Toolkit version 9.0 already installed, then some of the samples may not compile. In order to compile those samples, the CUDA Toolkit version 9.0 should be uninstalled.

- The SloMo and VSR samples use the NVIDIA VIDEO Codec SDK to process the videos. Therefore, all videos must be within the resolutions supported by the RTX hardware. For more information, see [Key Features of Video Codec SDK](#).

- In some cases after a driver update, NGX applications will report that “NGX is Unavailable”. This is normally a pathing issue. Ensure you restart the system and the paths to resolve the issue.
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