NVAPI Open Source SDK for Driver Release 580

Release Notes

August 2025

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NVAPI Release Notes

Introduction

NVAPI is NVIDIA Corporation's core software development kit that allows direct access to NVIDIA GPUs and drivers on all Windows platforms. NVAPI provides support for categories of operations that range beyond the scope of those found in familiar graphics APIs such as DirectX and OpenGL.

The following files are provided by NVIDIA:

- `nvapi.h`
- `nvapi_interface.h`
- `nvapi_lite_common.h`
- `nvapi_lite_d3dext.h`
- `nvapi_lite_salend.h`
- `nvapi_lite_salstart.h`
- `nvapi_lite_sli.h`
- `nvapi_lite_stereo.h`
- `nvapi_lite_surround.h`
- `NvApiDriverSettings.c`
- `NvApiDriverSettings.h`
- `nvHLSLExtns.h`
- `nvHLSLExtnsInternal.h`
- `nvShaderExtnEnums.h`
- `\x86\nvapi.lib`
- `\amd64\nvapi64.lib`
- `\docs\NVAPI_Reference_OpenSource.chm`
- `\docs\NVAPI_SDKs_Samples_and_Tools_License_Agreement(Public).pdf`

These release notes describe the new features, enhancements, and changes in the NVAPI SDK for this release.

Changes in NVAPI for Driver Release 580

New Functions

- Added `NvAPI_Disp_GetColorimetry`

New/Updated Structures

- Added `NV_DISPLAY_OUTPUT_MODE_CHANGE_EVENT_DATA`
- Added `NV_DISPLAY_COLORIMETRY_CHANGE_EVENT_DATA`
- Added `nvDisplayOutputModeChangeEventCallback` to union `nvCallBackFunc` inside `NV_EVENT_REGISTER_CALLBACK`
- Added `nvDisplayColorimetryChangeEventCallback` to union `nvCallBackFunc` inside `NV_EVENT_REGISTER_CALLBACK`
- Added `isNvidiaCertifiedDisplay` to `NV_HDR_CAPABILITIES_V3`
- Added `NV_DISPLAY_COLORIMETRY_V1`
- Added `maxFrameIntervalNs` to `NV_SET_ADAPTIVE_SYNC_DATA_V1`
- Added `NV_GET_VIRTUAL_REFRESH_RATE_DATA_V2`
- Added `NV_SET_VIRTUAL_REFRESH_RATE_DATA_V2`

New/Updated Enums

- Added the following enums to `NV_EVENT_TYPE`
    - `NV_EVENT_TYPE_DISPLAY_COLORIMETRY_CHANGE`
    - `NV_EVENT_TYPE_DISPLAY_OUTPUT_MODE_CHANGE`
- Added `NV_RISE_CONTENT_TYPE_UPDATE_INFO` to `NV_RISE_CONTENT_TYPE`

New Typedefs

- None

New Unions

- None

New Macros

- None

New Errors

- None

TCC Support

- None

MCDM Support

- None

NVAPI Security Information

- None

Deprecated NVAPI Functions

- None

Deprecated Enum Values

- None

NVAPIDriverSettings Additions/Removals

- None

New DRS Macros

- Added `NGX_DLSS_FG_OVERRIDE_RESERVED_KEY1_STRING`
- Added `NGX_DLSS_FG_OVERRIDE_RESERVED_KEY2_STRING`
- Added `NGX_DLSS_RR_OVERRIDE_RESERVED_KEY1_STRING`
- Added `NGX_DLSS_RR_OVERRIDE_RESERVED_KEY2_STRING`
- Added `NGX_DLSS_SR_OVERRIDE_RESERVED_KEY1_STRING`
- Added `NGX_DLSS_SR_OVERRIDE_RESERVED_KEY2_STRING`

New DRS Enums

- Added `EValues_NGX_DLSS_FG_OVERRIDE_RESERVED_KEY1`
- Added `EValues_NGX_DLSS_FG_OVERRIDE_RESERVED_KEY2`

- Added the following enums to `EValues_NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_G`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_H`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_I`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_J`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_K`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_L`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_M`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_N`
  - `NGX_DLSS_RR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_O`
- Added `EValues_NGX_DLSS_RR_OVERRIDE_RESERVED_KEY1`
- Added `EValues_NGX_DLSS_RR_OVERRIDE_RESERVED_KEY2`
- Added the following enums to `EValues_NGX_DLSS_SR_OVERRIDE_RENDER_PRESET_SELECTION`
  - `NGX_DLSS_SR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_K`
  - `NGX_DLSS_SR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_L`
  - `NGX_DLSS_SR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_M`
  - `NGX_DLSS_SR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_N`
  - `NGX_DLSS_SR_OVERRIDE_RENDER_PRESET_SELECTION_RENDER_PRESET_O`
- Added `EValues_NGX_DLSS_SR_OVERRIDE_RESERVED_KEY1`
- Added `EValues_NGX_DLSS_SR_OVERRIDE_RESERVED_KEY2`

Changed DRS Enums

- `PS_SHADERDISKCACHE_MAX_SIZE_DEFAULT`

HLSL Extension Additions/Removals

- None

NVAPI Security Information

User administrator privilege is required to access certain driver features per NVIDIA's overall security vision. This helps mitigate the impact of malware.

Each API requiring administrator access will return an `NVAPI_INVALID_USER_PRIVILEGE` error, when run with standard user privilege.

The application will require administrator privileges to access this API, which can be elevated to a higher permission level by selecting "Run as Administrator" in Admin approval mode.

The following API requires administrator privileges:

> `NvAPI_GPU_SetEDID`

Sample Code

The SDK package contains the `Sample_Code` directory, which provides code examples for the following features:

Feature	Sample Code Subdirectory	Sample Code
Custom timing	`CustomTiming`	`CustomTiming.cpp`
Display color control	`DisplayColorControl`	> `DisplayColorControl.cpp` > `NVHelper.cpp` > `NVHelper.h`
Display configuration	`DisplayConfiguration`	> `DisplayConfiguration.cpp` > `targetver.h`
GPU handle enumeration	`GPUHandleEnumeration`	`gpuHandleEnumeration.c`
QSYNC event registration	`QSYNC_Event_Registration`	`QSYNC_Event_Registration.cpp`
Sync configuration	`Sync_Configuration`	> `Sync_Configuration.cpp` > `targetver.h`
I2C	`i2c`	> `i2c.cpp` > `targetver.h`

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