



NVAPI Public SDK for Driver Release 535

Release Notes

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NVAPI Release Notes

Introduction

NVAPI is NVIDIA'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_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_Developer.chm
- > \docs\NVAPI_SDKs_Samples_and_Tools_License_Agreement(Public).pdf

These release notes describe the changes made in the NVAPI SDK for this release.

Changes in NVAPI for Driver Release 535

New Functions

- > Added `NvAPI_D3D12_GetNeedsAppFPBlendClamping`
- > Added `NvAPI_D3D12_LaunchCuKernelChainEx`
- > Added `NvAPI_D3D12_GetRaytracingDisplacementMicromapArrayPrebuildInfo`
- > Added `NvAPI_D3D12_BuildRaytracingDisplacementMicromapArray`
- > Added `NvAPI_D3D12_RelocateRaytracingDisplacementMicromapArray`
- > Added `NvAPI_D3D12_EmitRaytracingDisplacementMicromapArrayPostbuildInfo`

New/Updated Structures

- > Added `NVAPI_CU_KERNEL_LAUNCH_PARAMS_EX`
- > Added `NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_USAGE_COUNT`
- > Added `NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_DESC`
- > Added
`NVAPI_D3D12_BUILD_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_INPUTS`
- > Added
`NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_PREBUILD_INFO`
- > Added
`NVAPI_GET_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_PREBUILD_INFO_PARAMS_V1`
- > Added `NVAPI_D3D12_RAYTRACING_GEOMETRY_DMM_ATTACHMENT_DESC`
- > Added `NVAPI_D3D12_RAYTRACING_GEOMETRY_DMM_TRIANGLES_DESC`
- > Added `NVAPI_D3D12_RAYTRACING_GEOMETRY_DMM_TRIANGLES_DESC` to
`NVAPI_D3D12_RAYTRACING_GEOMETRY_DESC_EX`
- > Added
`NVAPI_D3D12_BUILD_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_DESC`
- > Added
`NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_POSTBUILD_INFO_CURRENT_SIZE_DESC`
- > Added
`NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_POSTBUILD_INFO_DESC`
- > Added
`NVAPI_BUILD_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_PARAMS_V1`
- > Added
`NVAPI_RELOCATE_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_PARAMS_V1`

- > Added
NVAPI_EMIT_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_POSTBUILD_INFO_PARAMS_V1

New/Updated Enums

- > Added NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_CAPS
- > Added NVAPI_D3D12_RAYTRACING_CAPS_TYPE_DISPLACEMENT_MICROMAP to NVAPI_D3D12_RAYTRACING_CAPS_TYPE
- > Added
NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_BUILD_FLAGS
- > Added NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_FORMAT
- > Added NVAPI_D3D12_PIPELINE_CREATION_STATE_FLAGS_ENABLE_DMM_SUPPORT to NVAPI_D3D12_PIPELINE_CREATION_STATE_FLAGS
- > Added
NVAPI_D3D12_SERIALIZED_DATA_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_EX to NVAPI_D3D12_SERIALIZED_DATA_TYPE_EX
- > Added
NVAPI_D3D12_RAYTRACING_ACCELERATION_STRUCTURE_BUILD_FLAG_ALLOW_DATA_ACCESS_EX to
NVAPI_D3D12_RAYTRACING_ACCELERATION_STRUCTURE_BUILD_FLAGS_EX
- > Added NVAPI_D3D12_RAYTRACING_GEOMETRY_TYPE_DMM_TRIANGLES_EX to NVAPI_D3D12_RAYTRACING_GEOMETRY_TYPE_EX
- > Added NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_PRIMITIVE_FLAGS
- > Added
NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_POSTBUILD_INFO_TYPE

New/Updated Unions

- > None

New Macros

- > Added
NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_ARRAY_BYTE_ALIGNMENT
- > Added
NVAPI_D3D12_RAYTRACING_DISPLACEMENT_MICROMAP_DC1_MAX_SUBDIVISION_LEVEL

New Errors

- > None

TCC Support

- > None

Deprecated NVAPI Functions

- > None

NVAPIDriverSettings Additions/Removals

- > Removed enum EValues_OGL_SLI_CFR_MODE
- > Added enum EValues_PS_SHADERDISKCACHE_FLAGS
- > Removed setting OGL_SLI_CFR_MODE
- > Added setting PS_SHADERDISKCACHE_FLAGS
- > Added setting APPIDLE_DYNAMIC_FRL_FPS
- > Added setting APPIDLE_DYNAMIC_FRL_THRESHOLD_TIME
- > Added setting PS_SHADERDISKCACHE_DLL_PATH_WCHAR

HLSL Extension Additions/Removals

- > Added NV_EXTN_OP_RT_TRIANGLE_OBJECT_POSITIONS
- > Added NV_EXTN_OP_RT_MICRO_TRIANGLE_OBJECT_POSITIONS
- > Added NV_EXTN_OP_RT_MICRO_TRIANGLE_BARYCENTRICS
- > Added NV_EXTN_OP_RT_IS_MICRO_TRIANGLE_HIT
- > Added NV_EXTN_OP_RT_IS_BACK_FACING
- > Added NV_EXTN_OP_RT_MICRO_VERTEX_OBJECT_POSITION
- > Added NV_EXTN_OP_RT_MICRO_VERTEX_BARYCENTRICS

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 a 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.

About the Sample Code

Sample code is provided with the SDK package that demonstrates the following features:

- > Custom Timing
- > Display Color Control
- > Display Configuration
- > I2C
- > QSYNC Event Registration
- > Sync Configuration

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