



NVAPI SDK – Public for Driver Release 470

Release Notes

Document History

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Version	Date	Authors	Description of Change
01	06/30/2021	CC	Initial release

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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
- ▶ \doc\NVAPI_Reference_Developer.chm
- ▶ \doc\NVAPI SDKs Samples and Tools License Agreement (Public).pdf

These release notes describe the changes made in the NVAPI NDA SDK for the Release 470 driver.

Changes in NVAPI for Driver Release 470

New/Updated Functions

- ▶ Added `NvAPI_GPU_GetArchInfo`
- ▶ Added `NvAPI_GPU_GetAdapterIdFromPhysicalGpu`
- ▶ Added `NvAPI_DISP_SetPreferredStereoDisplay`
- ▶ Added `NvAPI_DISP_GetPreferredStereoDisplay`
- ▶ Added `NvAPI_D3D11_GetResourceHandle`
- ▶ Added `NvAPI_D3D12_QueryPresentBarrierSupport`
- ▶ Added `NvAPI_D3D12_CreatePresentBarrierClient`
- ▶ Added `NvAPI_D3D12_RegisterPresentBarrierResources`
- ▶ Added `NvAPI_DestroyPresentBarrierClient`
- ▶ Added `NvAPI_JoinPresentBarrier`
- ▶ Added `NvAPI_LeavePresentBarrier`
- ▶ Added `NvAPI_QueryPresentBarrierFrameStatistics`
- ▶ Added `NvAPI_D3D12_CaptureUAVInfo`
- ▶ Added `NvAPI_D3D11_GetResourceGPUVirtualAddressEx`
- ▶ Added `NvAPI_D3D12_GetGraphicsCapabilities`
- ▶ Added `NvAPI_SYS_GetDisplayDriverInfo`
- ▶ Added `NvAPI_GPU_ClientRegisterForUtilizationSampleUpdates`

TCC Support added to the following functions:

- ▶ N/A

New/Updated Structures

- ▶ Added `NV_GPU_ARCH_INFO_V1`
- ▶ Added `NV_GPU_ARCHITECTURE_ID`
- ▶ Added `NV_GPU_ARCH_IMPLEMENTATION_ID`
- ▶ Added `NV_GPU_CHIP_REVISION`
- ▶ Added `NV_GPU_ARCH_INFO_V2`
- ▶ Added `NV_SET_PREFERRED_STEREO_DISPLAY_V1`
- ▶ Added `NV_GET_PREFERRED_STEREO_DISPLAY_V1`
- ▶ Added `NV_PRESENT_BARRIER_FRAME_STATISTICS`
- ▶ Added `NVAPI_UAV_INFO_V1`
- ▶ Added `NV_GET_GPU_VIRTUAL_ADDRESS_V1`
- ▶ Added `NV_D3D12_GRAPHICS_CAPS_V1`

- ▶ Added gpuActiveRenderTimeUs to NV_LATENCY_RESULT_PARAMS_V1
- ▶ Added gpuFrameTimeUs to NV_LATENCY_RESULT_PARAMS_V1
- ▶ Added NV_DISPLAY_DRIVER_INFO_V1
- ▶ Added NV_CLIENT_CALLBACK_SETTINGS_SUPER_V1
- ▶ Added NV_GPU_CLIENT_PERIODIC_CALLBACK_SETTINGS_SUPER_V1
- ▶ Added NV_GPU_CLIENT_CALLBACK_DATA_SUPER_V1
- ▶ Added NV_GPU_CLIENT_UTILIZATION_DATA_V1
- ▶ Added NV_GPU_CLIENT_CALLBACK_UTILIZATION_DATA_V1
- ▶ Added NV_GPU_CLIENT_UTILIZATION_PERIODIC_CALLBACK_SETTINGS_V1
- ▶
- ▶

New Enums

- ▶ Added NV_PRESENT_BARRIER_SYNC_MODE
- ▶ Added NV_GPU_CLIENT_UTIL_DOMAIN_ID
- ▶
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp48_3840 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp48_4096 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp100_4096 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp100_3840 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp120_4096 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp120_3840 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp100_5120 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp120_5120 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp24_5120 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp25_5120 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp30_5120 to the enum NV_DISPLAY_TV_FORMAT

- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp48_5120 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp50_5120 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_4Kp60_5120 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp24_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp25_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp30_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp48_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp50_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp60_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp100_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶ Added NV_DISPLAY_TV_FORMAT_UHD_10Kp120_10240 to the enum NV_DISPLAY_TV_FORMAT
- ▶

New Unions

- ▶ None

New Defines

- ▶ None

New Errors

- ▶ None

Deprecated NVAPI Functions

The following functions are deprecated:

Deprecated	Replaced By
N/A	N/A

The following enum values are deprecated:

Deprecated	Replaced By
N/A	N/A

NVAPIDriverSettings Additions/Removals

- ▶ None

HLSL Extension Additions/Changes

- ▶ None

NVAPI Security Information

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

Each API that requires the administrator access, will return `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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