



NVAPI Developer Open-Source Interface for Driver Release 520

Release Notes

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NVAPI Developer Open-Source Interface Release

NVAPI is NVIDIA Corporation's core software development kit that allows 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.

This release contains a version of nvapi.h, provided under MIT license, to enable open-source re-implementations of NVAPI for Windows emulation environments.

For those interested in developing applications using the NVAPI Developer SDK on Windows Platform, NVIDIA recommends using the NVAPI Developer SDK available at <https://developer.nvidia.com/nvapi>.

File List

The following files are provided as a part of the NVAPI Open-Source SDK:

nvapi.h

This file contains the interface constants, structure definitions and function prototypes for NVAPI interface.

nvapi_interface.h

This file is a reference for mapping the NVAPI identifiers to functions (more on this below).

NvApiDriverSettings.h

NvApiDriverSettings.c

These files are used to query and change driver settings. For more details, please see:

http://developer.download.nvidia.com/NVAPI/PG-5116-001_v01_public.pdf

NVAPI Runtime

The NVAPI runtime, nvapi.dll, provides the following key functions.

nvapi_QueryInterface() : maps a 32-bit identifier to a function pointer:

```
void *nvapi_QueryInterface(NvU32 id);
```

The NVAPI application will call nvapi_QueryInterface() to get individual NVAPI function pointers from nvapi.dll.

Please consult nvapi_interface.h for a mapping of identifiers to NVAPI function names.

NvAPI_Initialize()

```
NvAPI_Status __cdecl NvAPI_Initialize()  
{  
    return NVAPI_OK;  
}
```

NvAPI_Unload()

```
NvAPI_Status __cdecl NvAPI_Unload()  
{
```

```
    return NVAPI_OK;
}
```

Release Notes

New Functions

- Added `NvAPI_D3D12_SetAsyncFrameMarker`
- Added `NvAPI_D3D12_NotifyOutOfBandCommandQueue`
- Added `NvAPI_D3D12_GetRaytracingCaps`
- Added `NvAPI_D3D12_GetRaytracingOpacityMicromapArrayPrebuildInfo`
- Added `NvAPI_D3D12_SetCreatePipelineStateOptions`
- Added `NvAPI_D3D12_CheckDriverMatchingIdentifierEx`
- Added `NvAPI_D3D12_GetRaytracingAccelerationStructurePrebuildInfoEx`
- Added `NvAPI_D3D12_RelocateRaytracingOpacityMicromapArray`
- Added `NvAPI_D3D12_BuildRaytracingOpacityMicromapArray`
- Added `NvAPI_D3D12_EmitRaytracingOpacityMicromapArrayPostbuildInfo`
- Added `NvAPI_D3D12_BuildRaytracingAccelerationStructureEx`
- Added `NvAPI_GPU_GetMemoryInfoEx`

New/Updated Structures

- Added `NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_USAGE_COUNT`
- Added `NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_DESC`
- Added `NVAPI_D3D12_BUILD_RAYTRACING_OPACITY_MICROMAP_ARRAY_INPUTS`
- Added `NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_ARRAY_PREBUILD_INFO`
- Added `NVAPI_GET_RAYTRACING_OPACITY_MICROMAP_ARRAY_PREBUILD_INFO_PARAMS_V1`
- Added `NVAPI_D3D12_SET_CREATE_PIPELINE_STATE_OPTIONS_PARAMS_V1`
- Added `NVAPI_CHECK_DRIVER_MATCHING_IDENTIFIER_EX_PARAMS_V1`
- Added `NVAPI_D3D12_RAYTRACING_GEOMETRY_OMM_ATTACHMENT_DESC`
- Added `NVAPI_D3D12_RAYTRACING_GEOMETRY_OMM_TRIANGLES_DESC`
- Added `NVAPI_D3D12_RAYTRACING_GEOMETRY_DESC_EX`
- Added `NVAPI_D3D12_BUILD_RAYTRACING_ACCELERATION_STRUCTURE_INPUTS_EX`
- Added `NVAPI_GET_RAYTRACING_ACCELERATION_STRUCTURE_PREBUILD_INFO_EX_PARAMS_V1`
- Added `NVAPI_D3D12_BUILD_RAYTRACING_OPACITY_MICROMAP_ARRAY_DESC`

- Added
NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_ARRAY_POSTBUILD_INFO_CURRENT_SIZE_DESC
 - Added
NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_ARRAY_POSTBUILD_INFO_DESC
 - Added NVAPI_BUILD_RAYTRACING_OPACITY_MICROMAP_ARRAY_PARAMS_V1
 - Added
NVAPI_RELOCATE_RAYTRACING_OPACITY_MICROMAP_ARRAY_PARAMS_V1
 - Added
NVAPI_EMIT_RAYTRACING_OPACITY_MICROMAP_ARRAY_POSTBUILD_INFO_PARAMS_V1
 - Added
NVAPI_D3D12_BUILD_RAYTRACING_ACCELERATION_STRUCTURE_DESC_EX
 - Added
NVAPI_BUILD_RAYTRACING_ACCELERATION_STRUCTURE_EX_PARAMS_V1
- Added NV_GPU_MEMORY_INFO_EX_V1

New/Updated ENUMS

- Added OUT_OF_BAND_RENDERSUBMIT_START to enum NV_LATENCY_MARKER_TYPE
- Added OUT_OF_BAND_RENDERSUBMIT_END to enum NV_LATENCY_MARKER_TYPE
- Added OUT_OF_BAND_PRESENT_START to enum NV_LATENCY_MARKER_TYPE
- Added OUT_OF_BAND_PRESENT_END to enum NV_LATENCY_MARKER_TYPE
- Added NV_OUT_OF_BAND_CQ_TYPE
- Added NVAPI_D3D12_RAYTRACING_THREAD_REORDERING_CAPS
- Added NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_CAPS
- Added NVAPI_D3D12_RAYTRACING_CAPS_TYPE
- Added NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_ARRAY_BUILD_FLAGS
- Added NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_FORMAT
- Added NVAPI_D3D12_SERIALIZED_DATA_TYPE_EX
- Added
NVAPI_D3D12_RAYTRACING_ACCELERATION_STRUCTURE_BUILD_FLAGS_EX
- Added NVAPI_D3D12_RAYTRACING_GEOMETRY_TYPE_EX
- Added NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_SPECIAL_INDEX
- Added NVAPI_D3D12_RAYTRACING_INSTANCE_FLAGS_EX
- Added
NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_ARRAY_POSTBUILD_INFO_TYPE
- Added NVAPI_D3D12_RAYTRACING_OPACITY_MICROMAP_STATE
- Added NVAPI_RAY_FLAG_EX

- Added NVAPI_D3D12_PIPELINE_CREATION_STATE_FLAGS
- Added NV_GPU_ARCHITECTURE_AD100 to enum NV_GPU_ARCHITECTURE_ID
- Added NV_GPU_ARCH_IMPLEMENTATION_AD102 to enum NV_GPU_ARCH_IMPLEMENTATION_ID
- Added NV_GPU_ARCH_IMPLEMENTATION_AD103 to enum NV_GPU_ARCH_IMPLEMENTATION_ID
- Added NV_GPU_ARCH_IMPLEMENTATION_AD104 to enum NV_GPU_ARCH_IMPLEMENTATION_ID

NVAPI Security Info

- None

Deprecation NVAPI functions

- NvAPI_GPU_GetAdapterIdFromPhysicalGpu
- NvAPI_GPU_GetMemoryInfo

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