nanocosmos H.264 Video Decoder Filter

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Module / Version

nanocosmos H.264/AVC Direct Show Video Decoder Filter
nh264dec.ax Version 2.4.0.0

The nanocosmos H.264/AVC Video Decoder support streams in baseline, main and high profile. It is highly optimized for use on hyper-threading and multi core systems.

Connectivity

The input is accepting connections to splitter filters or combined source/splitter filters matching the following media types:

Major types:

      MEDIATYPE_Video

Subtypes:

      FourCCs: H264, h264, AVC1, avc1, X264, x264, VSSH, vssh,

      MEDIASUBTYPE_H264: {8D2D71CB-243F-45E3-B2D8-5FD7967EC09B}

Formats:

      FORMAT_VideoInfo,

      FORMAT_VideoInfo2,

      FORMAT_MPEG2_VIDEO

The output supports these media types:

Major types:

      MEDIATYPE_Video

Subtypes:

      MEDIASUBTYPE_YV12,

      MEDIASUBTYPE_I420,

      MEDIASUBTYPE_IYUV,

      MEDIASUBTYPE_YUY2,

      MEDIASUBTYPE_RGB24,

      MEDIASUBTYPE_RGB32,

      MEDIASUBTYPE_ARGB32,

      MEDIASUBTYPE_RGB565,

Formats:

      FORMAT_VideoInfo

      FORMAT_VideoInfo2

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Filter GUIDs

```
// Filter GUID
// {264DA7DD-CE74-472d-A2FD-796A1F0A379C}
DEFINE_GUID(CLSID_DSHOW_H264_DEC_FILTER,
0x264DA7DD, 0xCE74, 0x472d, 0xA2, 0xFD, 0x79, 0x6A, 0x1F, 0x0A, 0x37,
0x9C);


// Configuration interface ICodecProp
// {0F817204-82C8-4c12-884A-F45FB2F33A6E}
DEFINE_GUID(IID_ICodecProp,
0xf817204, 0x82c8, 0x4c12, 0x88, 0x4a, 0xf4, 0x5f, 0xb2, 0xf3, 0x3a, 0x6e);


// ICodecProp: IID_nanoPeg_LicenseString
// type: BSTR / Unicode string
// Set license string to unlock filter
// {1788F0B0-5985-4a19-B7FE-8AAC1BFC14B3}
DEFINE_GUID(IID_nanoPeg_LicenseString,
0x1788f0b0, 0x5985, 0x4a19, 0xb7, 0xfe, 0x8a, 0xac, 0x1b, 0xfc, 0x14, 0xb3);
```

Setting the license to unlock filter

The filter can be unlocked either through a license key entry in the windows registry or by setting the license key through COM interface ICodecProp::SetProperty with the property `IID_nanoPeg_LicenseString` as first parameter. The second license parameter has to be a wide/unicode string!

Decoder Configuration Registry Settings

The decoder is able to perform an adaptive frame dropping and deblocking depending on the quality / delay messages received from the downstream renderer filter.

Key: HKEY_CURRENT_USER\Software\nanocosmos\nh264dec

Frame dropping / skipping mode
 Determines the behaviour in the case of timing / performance problems.
 Value name: DroppingMode
 Value type: REG_DWORD
 Valid values:

   0 – no frames are skipped
   1 – skip non reference frames only (B-frames)
   2 – skip non intra frames only (P- and B-frames), <u>default value</u>

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Deblocking mode

Determines the deblocking behaviour.
Value name: DeblockingMode
Value type: REG_DWORD
Valid values:

> 0 – disable deblocking
> 1 – auto, decoder will reduce deblocking temporarily in the case of performance problems, <u>default value</u>
> 2 – always perform full deblocking
> 3 - always perform deblocking on reference frames only

Output color space selection

Forces the filter to use a desired output color format. If no or no valid value is set, the output color format will be negotiated with the downstream renderer filter (usually YV12).
Value name: ForceOutputFourCC
Value type: REG_SZ / String
Valid values: YV12, I420, IYUV, YUY2, RGB32, RGB24, RGB565, ARGB32

Deinterlacing Mode

Determines the deinterlacing behaviour.
Value name: DeinterlacingMode
Value type: REG_DWORD
Valid values:

> 0 – disabled
> 1 – duplicate, <u>default value</u>
> 2 – blend
> 3 – median
> 4 – edge detection
> 5 – median threshold
> 6 – content adaptive vertical temporal

DirectShow Editing Services (DES) Return Mode

Receive returns HRESULT error values if Deliver fails.
Needs to be enabled for DES.
Value name: DESReturnMode
Value type: REG_DWORD
Valid values:

> 0 – disabled, <u>default value</u>
> 1 – enabled

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Threading Mode

        Determines the threading behaviour.

        Auto detection or number of decoding threads.

        Value name: DESReturnMode

        Value type: REG_DWORD

        Valid values:

                0 – auto detect number of cpus, <u>default value</u>

                1-8 – set number of decoding threads

Debug-Log Configuration Registry Settings

Key: HKEY_CURRENT_USER\Software\DebugNano\nh264dec.ax

File name

        Sets the output file name. The folder must already exist.

        Value name: LogToFile

        Value type: REG_SZ / String

        Valid values: a valid output file name to enable file logging or an empty string

Logging level

        A higher value increases the amount of logging messages sent, and messages get more detailed.

        Value name: TRACE

        Value type: REG_DWORD

        Valid values:

                0 – minimal logging

                …

                9 – maximal logging

Embedding / Customizing nanocosmos technology

Nanocosmos also offers special OEM and customization service. Dependent on your needs, we may offer different models of licensing or application development.

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About nanocosmos

nanocosmos informationstechnologien gmbh is a software company providing professional video coding and streaming products. We are partners for digital TV and video/audio streaming for intra- and internet applications. Nanocosmos provides encoding and decoding solutions for any video standard on any platform, with specific expertise in plugin architectures and DirectShow filters. Based on core technology, additional support and development service is available for custom applications.

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