

nanocosmos MP4-3GP-MOV Multiplexer Filter

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Introduction

The nanocosmos MP4/QT Multiplexer Filter enables you to create MP4, 3GP and MOV files from several audio/video input streams. This offers a wide range of applications from Mobile Phones (3GP), Portable Devices, (iPod, iPhone, Sony PSP etc.) up to Professional HDTV and broadcast formats.

Module / Version

Module name: nmp4mux.ax

Version: 2.0.0.3

The module nmp4mux.ax contains two DirectShow filters:

1. nanocosmos MP4 Multiplexer Filter
2. nanocosmos QuickTime Writer (MPEG-2 / Broadcast)

DirectShow Connectivity

The video input is accepting connections to filters matching the following media types:

Major types:

MEDIATYPE_Video

Subtypes:

MEDIASUBTYPE_MPEG2_VIDEO,
MEDIASUBTYPE_H263,
MEDIASUBTYPE_H264,
MEDIASUBTYPE_AVC1,
MEDIASUBTYPE_MP4V,
MEDIASUBTYPE_MP4S,
MEDIASUBTYPE_MP41,
MEDIASUBTYPE_MP42,
MEDIASUBTYPE_DIVX,
MEDIASUBTYPE_XVID,
MEDIASUBTYPE_DX50,
MEDIASUBTYPE_MJPG

Formats:

FORMAT_VideoInfo,
FORMAT_VideoInfo2
FORMAT_MPEG2Video

MPEG-2 Broadcast Filter supports only MEDIASUBTYPE_MPEG2_VIDEO and PCM Audio!

The audio input is accepting connections to filters matching the following media types:

Major types:

MEDIATYPE_Audio

Subtypes:

MEDIASUBTYPE_PCM,
MEDIASUBTYPE_IEEE_FLOAT,
MEDIASUBTYPE_MPEG1AudioPayload,
MEDIASUBTYPE_MPEG1Audio,
MEDIASUBTYPE_MP3,
MEDIASUBTYPE_AAC,
MEDIASUBTYPE_AMR,
MEDIASUBTYPE_SAMR

Formats:

FORMAT_WaveFormatEx

Configuration

The multiplex configuration may be set by using the COM Interface IMP4Mux as declared in header file IMP4Mux.h or through filter property page.

```
// MP4 Multiplexer Filter GUID
// {78D670BF-49B5-4a3b-BB8C-E2A36E688FCF}
DEFINE_GUID(CLSID_NanoMP4Muxer,
0x78d670bf, 0x49b5, 0x4a3b, 0xbb, 0x8c, 0xe2, 0xa3, 0x6e, 0x68, 0x8f, 0xcf);

// QT Writer MPEG-2 Broadcast Filter GUID
// {C2FB362B-CE6C-4797-BC16-F81976DFEF61}
DEFINE_GUID(CLSID_NanoQTWriter,
0xc2fb362b, 0xce6c, 0x4797, 0xbc, 0x16, 0xf8, 0x19, 0x76, 0xdf, 0xef, 0x61);

// Property Page for both filters
// {67F58B29-A153-46d2-9ACC-8C9F103AEF5F}
DEFINE_GUID(CLSID_MP4MuxerPropPage,
0x67f58b29, 0xa153, 0x46d2, 0x9a, 0xcc, 0x8c, 0x9f, 0x10, 0x3a, 0xef, 0x5f);

// Configuration Interface GUID
// {701D3A21-5041-45ad-ACBC-E025C294A690}
DEFINE_GUID(IID_IMP4Mux,
0x701d3a21, 0x5041, 0x45ad, 0xac, 0xbc, 0xe0, 0x25, 0xc2, 0x94, 0xa6, 0x90);
// 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!

Configuration through IMP4Mux interface

```

IMP4Mux : public IUnknown
{
    STDMETHODCALLTYPE (SetMuxType (MP4MuxType muxType))=0;
    STDMETHODCALLTYPE (SetInterleaving (MP4MuxInterleaving muxInterleaving))=0;
    STDMETHODCALLTYPE (GetMuxType (MP4MuxType* muxType))=0;
    STDMETHODCALLTYPE (GetInterleaving (MP4MuxInterleaving* muxInterleaving))=0;

    // get/set timecode track options
    // timecode value in frames
    STDMETHODCALLTYPE (GetFirstTimecode (int32_t* timecode))=0;
    STDMETHODCALLTYPE (GetWriteTimecodeTrack (bool* write))=0;
    STDMETHODCALLTYPE (SetFirstTimecode (int32_t timecode))=0;
    STDMETHODCALLTYPE (SetWriteTimecodeTrack (bool write))=0;
};

```

1. Set the desired multiplex format by calling 'SetMuxType' function

MP4 Multiplexer supports:

- Automatic selection from file extension (mp4,3gp,3gpp,mov), default
- MOV/QuickTime
- 3GP/3GPP
- Standard MP4
- MP4 for Apple iPod/iPhone
- MP4 for Sony Playstation Portable

MPEG-2 Broadcast Filter supports:

- MOV MPEG-2 Broadcast Generic
- MOV MPEG-2 Broadcast XDCAM 1080 50i
- MOV MPEG-2 Broadcast IMX 50 PAL

Additional multiplex format flags:

- Write output to multiple small file chunks (segmented file mode)
This mode is automatically activated if the destination filename contains the index pattern “%i” and/or the timestamp pattern “%t”
- Write Moov index in advance (MPEG-2 only)

2. Set the desired interleaving format:

- No interleaving
- Interleaving of audio and video streams, default

3. Get current multiplex format setting

4. Get current interleaving format setting

Additional settings configurable through ICodecAPI interface

```
// Length of one file chunk in segmented mode in ms
// VARIANT_TYPE: VT_I8, VARIANT::llVal
// default: 60000 (60 seconds)
// {66D77CD7-0D5D-49ff-B77B-95FB794A1F0A}
DEFINE_GUID(PROPID_nanoMP4MuxerSegmentDuration,
0x66d77cd7, 0xd5d, 0x49ff, 0xb7, 0x7b, 0x95, 0xfb, 0x79, 0x4a, 0x1f, 0xa);

// Behaviour if destination filename already exists
// VARIANT_TYPE: VT_I4, VARIANT::intVal
// Values:
// 0 - rewrite always (default)
// 1 - rename existing in segmented mode
// 2 - rename existing always
// {76514095-E93F-47fe-8394-67A4E9BA2EE1}
DEFINE_GUID(PROPID_nanoMP4MuxerFilenameMode,
0x76514095, 0xe93f, 0x47fe, 0x83, 0x94, 0x67, 0xa4, 0xe9, 0xba, 0x2e, 0xe1);

// Place MOOV index at the beginning of the file, streaming fast start
// VARIANT_TYPE: VT_BOOL, VARIANT::boolVal
// Values: VARIANT_TRUE - enable, VARIANT_FALSE - disable (default)
// {CD38E1A5-EE4A-4522-BECC-E592A6EB7A19}
DEFINE_GUID(PROPID_nanoMP4MuxerFastStart,
0xcd38e1a5, 0xee4a, 0x4522, 0xbe, 0xcc, 0xe5, 0x92, 0xa6, 0xeb, 0x7a, 0x19);
```

Debug-Log Configuration Registry Settings

Key: HKEY_CURRENT_USER\Software\DebugNano\nmp4mux.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

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