



1 Introduction

The purpose of this sample is to demonstrate how to build and execute a simple video encoder using AMD Media Framework (AMF). The sample encodes raw video content to generate compressed H.264 Elementary stream.

2 Using the sample

2.1 Location `$<installDirectory>\samples\amf\simpleEncoder\`

2.2 Contents Package Contents

Folder:

`$<installDirectory>\samples\amf\simpleEncoder\src\`

File name	Description
SimpleEncoder.cpp	Source file for Simple Encode application

Folder:

`$<installDirectory>\samples\amf\simpleEncoder\build\windows\`

File name	Description
SimpleEncoderVs10.sln	Microsoft Visual Studio 10 solution file
SimpleEncoderVs10.vcxproj	Microsoft Visual Studio 10 project file
SimpleEncoderVs10.vcxproj.filters	Microsoft Visual Studio 10 project filter file
SimpleEncoderVs12.sln	Microsoft Visual Studio 12 project solution file
SimpleEncoderVs12.vcxproj	Microsoft Visual Studio 12 project file
SimpleEncoderVs12.vcxproj.filters	Microsoft Visual Studio 12 project filter file

Folder:

`$<installDirectory>\samples\amf\simpleEncoder\docs\`

File name	Description
MediaSDK_AMF_simpleEncoder.pdf	Sample documentation

2.3 Compile

1. Ensure that the following tools and SDKs are present:
 - Microsoft Visual Studio 2010 or 2012
 - If Windows Software Development Kit (SDK) is not installed, install it from <http://msdn.microsoft.com/en-us/library/windows/desktop/hh852363.aspx>.
2. Open one of the following solution files:
 - `$<installDirectory>\samples\amf\simpleEncoder\build\windows\SimpleEncoderVs12.sln`
 - `$<installDirectory>\samples\amf\simpleEncoder\build\windows\SimpleEncoderVs10.sln`
3. Build the sample:
 - Open the `SimpleEncoderVs10.sln` solution file with Microsoft Visual Studio 2010 Professional Edition or the `SimpleEncoderVs12.sln` solution file with Microsoft Visual Studio 2012 Professional Edition.
 - To build all the solutions, select `Build > Build Solution`.
 - The executable `simpleEncoder.exe` is created in the following folders for 32-bit builds and 64-bit builds:
`$<installDirectory>\samples\amf\simpleEncoder\bin\x86\`
`$<installDirectory>\samples\amf\simpleEncoder\bin\x86_64\`
 - Depending on the build (i.e. 32-bit or 64-bit), the custom build step copies the appropriate `.dlls` file from the `$<installDirectory>\dll\amf\` folder into the relevant `\bin\` directory.

3 How to Run

The sample can be executed on an AMD platform that includes the VCE hardware block.

On the command prompt, change to the directory that contains the executable, and execute the following command:

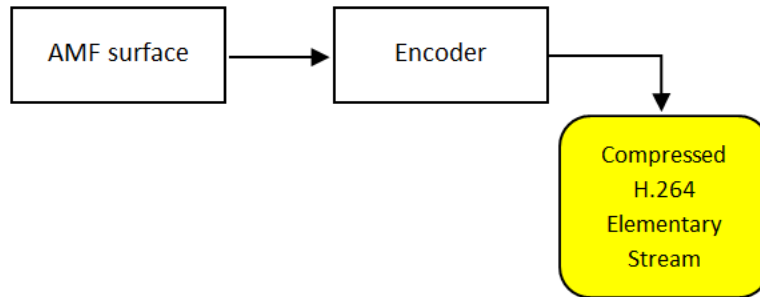
```
simpleEncoder.exe <BufferMemoryType>
```

BufferMemoryType: Specify the buffer memory type, either DX9 or DX11

The output H264 elementary stream, `output.h264`, is generated after encoding completes.

4 Implementation Details

The sample implements the following encode pipeline:



The Data in the Encode Pipeline flows through the following processing elements:

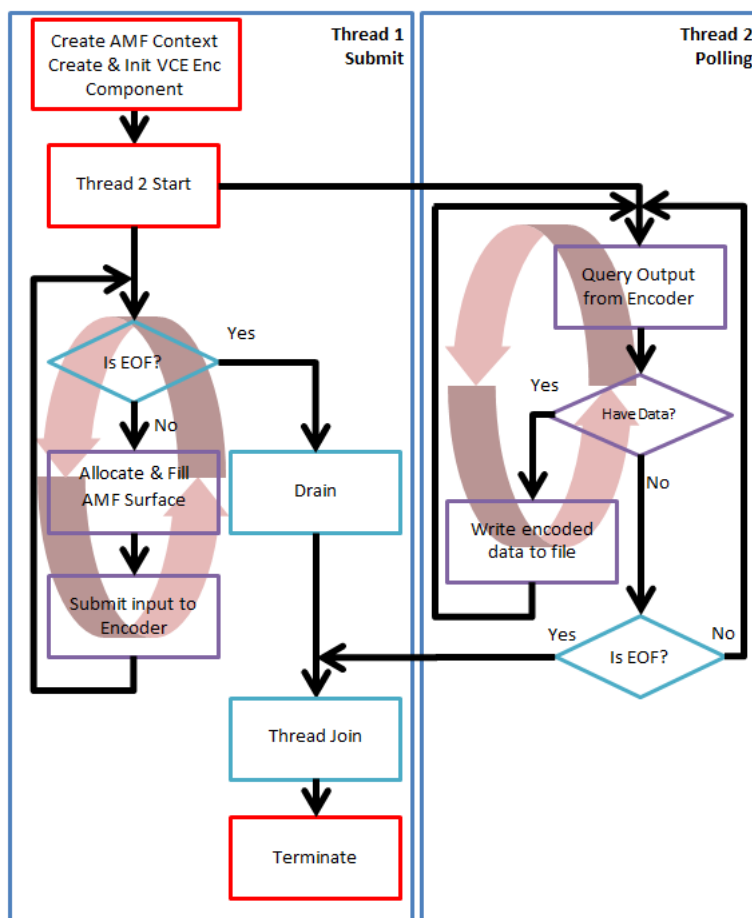
- AMF Surface: Create and fill surface with color.
- Encoder: Hardware-accelerated (VCE) H.264 Video Encoder. Encodes the input content to generate compressed H.264 elementary stream.

Parameter Name	Description	Value
widthIn	AMF Surface width to be created	1920
heightIn	AMF Surface height to be created	1080
frameRateIn	Encoding Frame Rate	30
bitRateIn	Encoding Bitrate	1000000
rectSize	AMF Surface rectangular size	50
frameCount	Num. of frames to encode	500

The sample prints the following performance parameters:

- Latency in ms
- Average encode time in ms / frame
- Average time in ms to write one encoded frame to the file

The sample is constructed using native AMF APIs executing over two threads, as shown in the following figure.



5 Supported formats

The following file formats are supported:

- Video encoders supported: H.264
- Output file format: H.264 Compressed Elementary Stream

6 Known Limitations

The sample is currently supported on the following platforms:

- Windows 7 (DirectX 9)
- Windows 8.1 (DirectX 9 and DirectX 11.1)

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