

Capella Systems Cambria FTC x265 Exporter PlugIn

About

This PlugIn is designed as a coding enhancement for Capella Systems Cambria FTC. It adds the x265 codec for HEVC encoding. It is available for wrapping in MPEG Transport Streams and Elementary Streams, MP4, MOV as well as Adaptive Bitrate transcoding and packaging (MPEG DASH, Microsoft Smooth Streaming, Apple HTTP Live Streaming). This is achieved by deeply integrating the libx265.dll into the transcoding engine and the configuration user interfaces. As result this PlugIn shows up within FTC as any other standard codec.

Legal information

Please make sure the “shared” builds of libx265 and its prerequisites you download or build yourself are licensed properly.

The libraries that are dynamically linked by this plugIn are licensed within the GPL v2 License. Within this license, it is explicitly allowed to “dynamically link” to such libraries from proprietary software. As we do not make use of any code that comes with libx265 or any of its libraries within our dll, it does not underly the GPL v2 or any other open-source license. Users of this plugIn are allowed to reverse engineer or debug all deliverables of libx265 whilst our plugin makes use of them. Also we will not spare with answers on questions about what individual methods we make use of, if this is of interest for you.

License

This PlugIn is currently made available open source under GPL v2. It’s use is free of charge. Any change in licensing is reserved by us as the licensor of this plugIn for Cambria FTC.

Installation – General

Please perform the following steps on each individual node before trying to make use of the plugin:

Downloads:

Please download the latests Cambria FTC build but at least a build later than 3.0.

In addition you need our x265 exporter plug in from <http://www.x-dream-media.com/downloads/capella/x265.zip>.

Installing the Encoder Plugin:

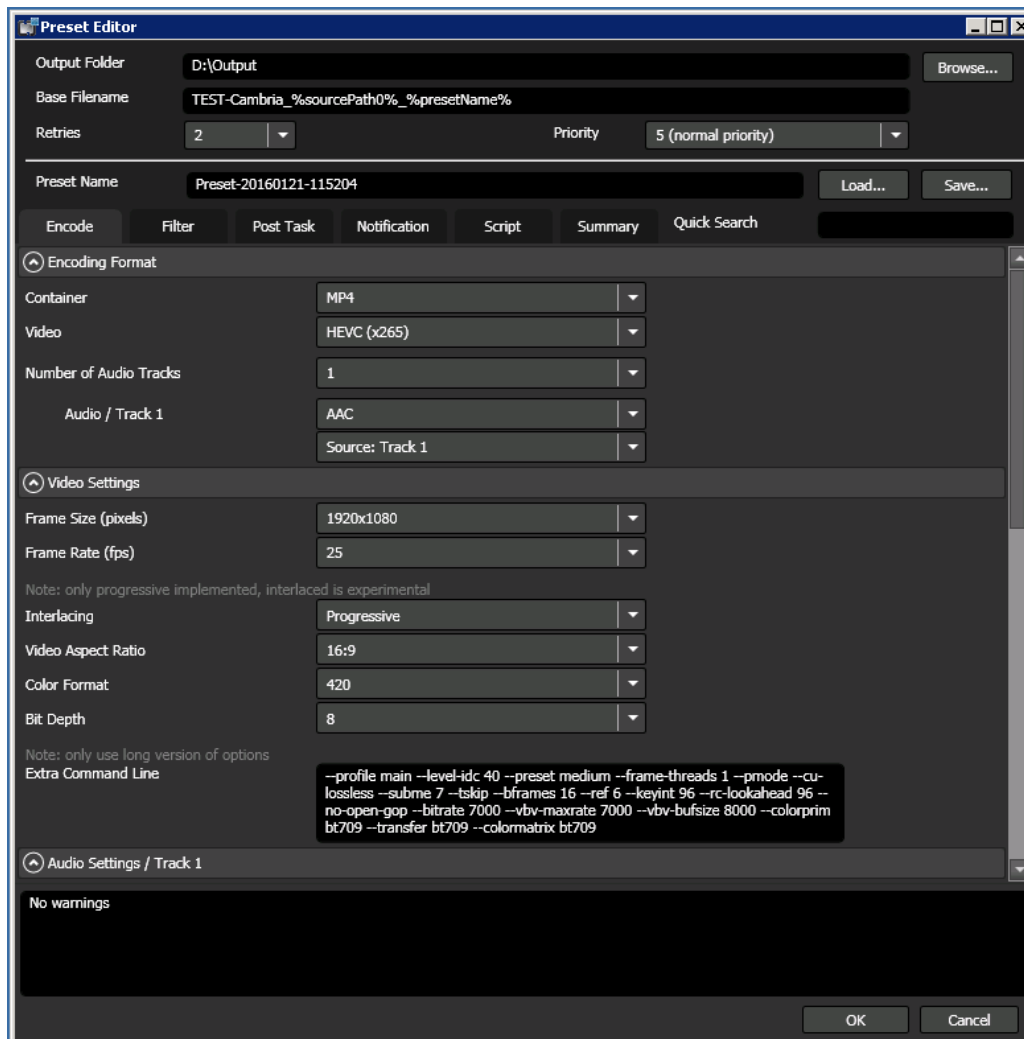
The x265 encoder plugin installation directions can be found in the install instructions.txt:

- first install Cambria FTC
- install vc_redist.x64.exe
- copy EncoderPlugin_x265.pvec to C:\Program Files(x86)\Capella\Cambria
- copy EncoderPluginUI_x265_32bit.pveu to C:\Program Files(x86)\Capella\Cambria
- copy EncoderPluginUI_x265_64bit.pveu to C:\Program Files(x86)\Capella\Cambria\cpx64
- copy libx265.dll to C:\Program Files(x86)\Capella\Cambria\cpx64
- copy libx265-10.dll to C:\Program Files(x86)\Capella\Cambria\cpx64
- After copying the plugin files and libraries into this folders please restart the “Capella CpServiceManager” service via the Windows Services Manager console application. Also please close and re-open all active Cambria FTC Applications.

First Run:

Once the plugin installed you can find the "HEVC (x265)" codec under the MPEG-2 TS, MPEG-2 ES / MP4 / MOV and Adaptive Bitrate containers.

See following page ...



Installation – Debugging

Making the new x265 codec visible within the GUI and available to the transcoding service requires restarting the GUI application and the service (see last step in the installation chapter). If this has not happened the x265 codec stays hidden.

Transcode – Settings

When the x265 codec is selected the following default settings are provided. They can be altered as needed.

Default Command Line:

```
--profile main --level-idc 62 --preset medium --frame-threads 1 --pmode --cu-lossless --subme 7 --tskip --bframes 16 --ref 6 --keyint 96 --rc-lookahead 96 --no-open-gop --bitrate 2000 --vbv-maxrate 2000 --vbv-buFSIZE 8000 --colorprim bt709 --transfer bt709 --colormatrix bt709
```

Transcode – Debugging

The PlugIn allows to specify any libx265 command line parameter via a text box within the preset editor. Such parameters are not validated during the configuration time. This allows specifying values that are violating standards or exceeding the codec capabilities. Consequently transcoding jobs will fail during runtime and you will receive an error message a while after starting the transcoding job. But the error messages will guide you directly to the values to be changed.

Please make sure that you have set the parameters to values that are matching the standard of your chosen wrapper/codec combination. For details please refer <http://x265.readthedocs.org/en/default/cli.html>.

Cases where an "Unexpected Internal Error" errors can occur:

- x265 attributes are set to values that are not within its range
- FTC video settings are set to a setting that is not compatible with a x265 command line setting (for example: Frame Size set to 3840 x 2160 and --level-idc 40)
- x265 attribute names are mistyped or are in short form

Version

Version 1.0

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