

TimeCoder v5.2: Avoiding Transcoding during DepoView DVD Authoring

This document provides details about transcoding and best practices to avoid or minimize it during the DepoView DVD creation process.

Understanding Transcoding

- If the multimedia attributes are not fully DVD compliant they will be automatically transcoded during the authoring process.
- The transcoding process for video streams (within the multimedia asset) is usually almost as long as the source video. For example, if a 1-hour non-DVD compliant MPEG-2 video is used as the multimedia asset, it can take nearly 1-hour to fully transcode.
- The transcoding process for audio streams (within the multimedia asset) is very fast and efficient. Transcoding the audio stream only of a 1-hour DVD compliant MPEG-2 video takes only a few minutes.
- Audio transcoding will occur if the audio stream of the multimedia asset is not Linear PCM. DepoView DVDs are created using Linear PCM audio. For example, many MPEG-2 Program Streams are created with the MPEG Audio Layer II format. These streams will be transcoded to PCM during the DepoView DVD authoring process.

Best Practices

- Running the DepoView DVD Creator on a more powerful PC (e.g. Intel Core2Duo) will expedite the transcoding process.
- Limit the duration of each multimedia asset to no more than 2 hours. If the deposition video is much more than 2 hours (e.g. 2:15) it may need to be transcoded to a lower bitrate in order to fit all of the content onto a single DVD-5 (4.7GB) disc.
- Use Double Layer (DVD+R DL) media if the multimedia asset is encoded to a bitrate higher than 3000 Kbps or is much longer than 2 hours. A Double Layer (DL) disc can contain up to 8.5GB of data. This usually equates to slightly more than 4 hours of MPEG-2 deposition video if encoded no higher than 3000 Kbps.
- It is imperative to encode MPEG-1 video using the attributes listed at the end of this document. Non-DVD compliant MPEG-1 video will be fully transcoded to DVD-Compliant MPEG-2 video during the authoring process. Transcoding from non-DVD compliant MPEG-1 video to MPEG-2 is extremely time consuming.
- Do not encode MPEG-1 video with a resolution other than 352x240. If the resolution is not at this setting, the multimedia asset will be determined to be non-DVD compliant – resulting in a full transcode.
- Make sure to use the inData Digital Video Disc (DVD) Extractor to rip existing depositions contained on DVD-Video. This utility creates MPEG-2 Program Streams from the DVD-Video that are DVD compliant. If another tool is used to rip the DVD-Video, the resulting MPEG-2 stream could be detected as non-compliant, resulting in a transcode.
- If you use the Digital-Rapids *DRC-Stream* line of hardware encoding cards, you can create 100% DVD-compliant MPEG-2 Program Streams. Copy the Digital Rapids profile from the `\Support\Encoding Profiles\Digital Rapids\` folder on the TimeCoder Pro 5.2 installation CD to the profiles folder used by the DRC-Stream software. Using the `MPEG2_PCM_AUDIO.xml` profile will ensure that no audio or video transcoding will be required when creating DepoView DVDs. This step will considerably improve the DVD authoring time.

- All Microsoft DV-AVI files used as multimedia assets will have to be transcoded to DVD-compliant MPEG-2 video. If you are capturing raw DV-AVI video directly from mini-DV tape as part of your internal video production workflow, use the DepoView DVD Creator as your MPEG-2 encoder. You will not need to encode your raw DV-AVI content to MPEG-2 prior to synchronization. TimeCoder Pro 5.2 can synchronize directly from raw DV-AVI video and use it as a multimedia asset for DepoView DVD authoring. The DVD authoring processes will simply transcode to DVD-Compliant MPEG-2 video – which is usually faster than (realtime) hardware encoding. Additionally, it alleviates the need to purchase hardware encoding equipment.

Preferred MPEG-1 and MPEG-2 File Attributes

MPEG-2 Video

- MPEG-2 Program Stream (Constant Bitrate)
- Video Size: 720 x 480
- Video Bitrate: 3000 Kbps
- Audio Type: PCM
- Audio Bitrate: 1536 Kbps (Default for PCM)

MPEG-1 Video

- MPEG-1 Program Stream (Constant Bitrate)
- Video Size: 352 x 240
- Video Bitrate: 1150 Kbps (1856 Kbps / Max)
- Audio Type: MPEG Audio Layer 2
- Audio Bitrate: 192 Kbps (or better)

NOTE: MPEG-1 encoding hardware/software cannot produce MPEG-1 streams with PCM audio. Therefore, the audio streams will be transcoded during DepoView DVD creation.