Application Note

Infocaster™ Video Guide

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Supported Formats

The following are the streaming and clip formats supported in the latest versions of Infocaster™.

Supported Streaming Formats

The Video Stream Quick Editor uses the MainConcept™ Network Streaming Package to receive media data over a network. It supports the Real-Time Transport Protocol (RTP) for connecting to broadcast servers and the Real Time Streaming Protocol (RTSP) for video on demand.

MainConcept can receive the following media streams from the network.

- MPEG-1 System Stream
- MPEG-2 Transport Stream
- MPEG-2 Program Stream
- MPEG-1 Video
- MPEG-1 Audio (including mpa-robust for MP3 audio according to RFC-3119)
- MPEG-2 Video
- MPEG-2 Audio
- AVC/H.264
- MPEG-4 Part 2 Video
- AAC
- AMR
- RAW data
- VC-1
- Streams can be specified by .SDP file

For complete information about the features of the MainConcept Network Streaming Package, visit the Main Concept (http://www.mainconcept.com) website.

Supported Video Clip Formats

The following formats are supported by the Video Clip Quick Editor.

**Supported Video Clip Formats**

<table>
<thead>
<tr>
<th>Format</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVI - 32 Bit Uncompressed</td>
<td>HD resolution files require high bandwidth.</td>
</tr>
<tr>
<td>AVI - DivX MPEG-4</td>
<td>Implemented but still being tested.</td>
</tr>
<tr>
<td>Format</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>AVI - H.264/AVC</td>
<td></td>
</tr>
<tr>
<td>AVI - MPEG-1</td>
<td></td>
</tr>
<tr>
<td>DV, DVCPro 25/50</td>
<td></td>
</tr>
<tr>
<td>DVCProHD</td>
<td>Implemented but still being tested.</td>
</tr>
<tr>
<td>LXF - Harris</td>
<td></td>
</tr>
<tr>
<td>LTV - Harris</td>
<td>Requires Altitude Express hardware. Without Altitude Express hardware some limited resolution support is possible.</td>
</tr>
<tr>
<td>MOV - QuickTime</td>
<td>Performance issues currently limit support of 1080i H.264 files.</td>
</tr>
<tr>
<td>MPEG-2</td>
<td></td>
</tr>
<tr>
<td>MPEG-4 Part 2</td>
<td></td>
</tr>
<tr>
<td>MXF wrappered media</td>
<td>Implemented but still being tested. Can only be played if the appropriate codec is installed. No support for metadata extraction.</td>
</tr>
<tr>
<td>Windows Media, VC-1</td>
<td></td>
</tr>
</tbody>
</table>

The following formats are not currently supported.

- RealVideo.
- AVI - Matrox M-JPEG OpenDML

**Play From Source**

When using Play From Folder or Play From Data Source to play content, files which are located on a network path can have a negative impact on playback and network bandwidth. We strongly recommend that the files are located on the local system.

**ION Systems**

H.264 and MPEG-2 are the preferred formats for ION systems.

**Streaming Input Settings**

When streaming video into a Live Video region, the following settings are recommended.
Recommended Streaming Input Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Recommended Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codec, resolution, and bitrate</td>
<td>• MPEG2, 1280x720, 16Mbps.</td>
</tr>
<tr>
<td></td>
<td>• MPEG2, 1920x1080i, 16Mbps.</td>
</tr>
<tr>
<td></td>
<td>• H.264, 1280x720, 8Mbps.</td>
</tr>
<tr>
<td></td>
<td>• H.264, 1920x1080i, 8Mbps.</td>
</tr>
<tr>
<td>GOP Interval</td>
<td>Closed.</td>
</tr>
<tr>
<td>GOP Length</td>
<td>Long (eg. 15-18).</td>
</tr>
<tr>
<td>Latency</td>
<td>Low (immediate delivery of frames upon completion of encoding and compression).</td>
</tr>
</tbody>
</table>

Dynamic Web Viewer Best Practices

Starting with Infocaster version 4.4.4, the Dynamic Web Viewer uses the Chromium Embedded Framework for web functionality.

**Note:** The Dynamic Web Viewer only supports the *.ogg and *.webm video file formats.
Video Clip Best Practices

This is a list of best practices for different video clip codecs. Start with these suggestions when creating video clips for your content.

Considerations

Infocaster offers few restrictions when you create your content. Keep the following considerations in mind during the design and troubleshooting of your content.

- The size of finished clips varies considerably depending on the codec and the available options (bit rate, compression, etc.) Be sure that you have enough drive space to store your clips.
- Optimum bit rates depend on the video standard, available compression settings, and the complexity of the video. Values that are too high will produce larger files which require more disk space and disk bandwidth during playback, and values that are too low will produce compression artifacts.
- Complex Infocasts with many regions and quick transitions require more CPU and GPU resources than do simpler Infocasts. If you find that your clips require too much time to set up, or if the items in your Infocast have difficulty playing, you may need to simplify your Infocast, increase the time between item transitions, or lower your clip bit rate.

General Guidelines

The following are general guidelines for creating Infocaster video clips.

Field Order

We recommend the following field order settings when creating interlaced video clips.

- HD: Upper field first.
- SD PAL: Upper field first.
- SD NTSC: Upper field first.

Frame Rates

Usually the content that is being ingested has already had its frame rate set, in which case no change should be necessary. The broadcast standards for each region should also be considered.

When creating content for progressive scan monitors, be sure it is de-interlaced.
Resolution

Scaled clips require more processing power than full-size ones. If you are creating complex Infocasts with many regions and quick transitions, consider rendering your clips at the same size as your video regions if possible.