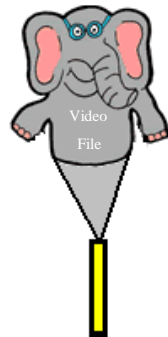# Streaming Video

By Curt Mastaller

What is Streaming Video?

- In a very general sense "Streaming" is where the client begins to play the video before the server has finished sending the whole file (i.e. Quicktime)
- A stricter definition where a file is never sent, rather a buffer constantly writes over itself (i.e. playing a live broadcast)
- Buffering - allows you to view and download at the same time

Important Challenges for Streaming Video

1. Sheer size of video files

2. Limitations of bandwidths

3. Displaying quality, real time video
   - compromises like size and detail

So How is it Done?

- As far as a computer is concerned, the two most important aspects of working with streaming media are:

    – 1. Compression

    – 2. Synchronizing, Managing and Playing media

Compression

- Codecs (COder/DECoder)
  - shrink video by replacing the original frames with more compact versions using mathematical algorithms / formulas such as *wavelet, fractal* and *discrete cosine transform (DCT)*
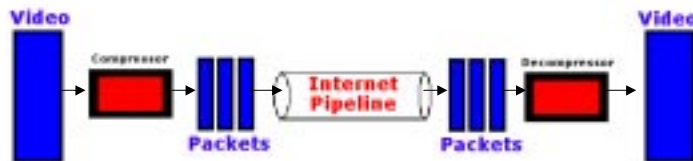
Synchronizing, managing and playing media

- Handled by multimedia architectures like

- Controls how streaming media is handled by the computer, including file conversions, how movies are displayed on the screen, and much more
- Use codecs to compress the video data

Creating Streaming Video

Step 1.   Make your video and download it to your computer

Step 2.   Edit Your Videos and Produce the Streaming Video Product

Step 3.   Link the Streaming Video to Your Web Site

Make Your Video and Download it to Your Computer

- Digital Video Camera
- FireWire connection
- Capture Card
- Tips for shooting quality video
  - use a tripod, simplify background, avoid zooming

Edit Your Videos and Produce the Streaming Video Product

- Capture codecs
  - DV - new format where digitizing is done by the camera
- Capture card editing software
  - Adobe Premiere 6
  - Real Producer (free)
  - Should allow you to output your video to a number of architecture formats
- There is no single "best" architecture, rather the choice of which architecture to use depends on your needs

Link the Streaming Video to Your Web Site

For example, if you create a real player video, you would make the following link to your web page:

<a href="my video.ram" Click to play the video /A>

Note: Your viewers will need to have their own RealPlayer installed (or whatever player is required to support the architecture you encoded your video with)

Example (Time permitting)

http://www.mini-mercial.com/playdemo.html

THAT'S MY PRESENTATION THANKS FOR YOUR ATTENTION

Questions?

Detailed report on Streaming Video:

http://www.cs.ualberta.ca/~curt/StreamingVideo.html