

MAX 2007

Integrating Flex and Video

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Session Outline



- OVERVIEW
- DEMOS
 - mx.controls.VideoDisplay
 - Implementing Full Screen
 - H.264 (aka MPEG4)
 - ReviewTube
 - Flash FLVPlayback
 - Flex Video Conference
 - Adobe Premiere Express
 - Adobe Media Player
 - VroomVideo.com
- Q&A

Note: Links in presentation online at:
<http://halcyonsolutions.net/presos/07/flexvideo> vegasflex.org

OVERVIEW



Welcome to the Revolution!

- **Rich Internet Applications**
 - Flex leading the charge
 - AIR joining the fray
- **Video**
 - Flash come from no where in 2002 to dominating video on the web today
 - Mobile devices now in the offing

- **Playback**
 - Primary Use Case
- **Live Broadcast & Record**
 - Limited Quality (Sorenson Spark)
 - Appropriate for "Social Networking" use cases, e.g. video chat
 - Non-Flex solutions from Adobe for use cases requiring higher quality

Video Playback in Flex – Options

- **Flex Framework Component**
 - `mx.controls.VideoDisplay`
- **Flash CS3 FLVPlayback Component using the Flex Component Kit for Flash CS3**
- **Custom Development**
- **Third Party / Community / Open Source (not yet)**

DEMOS



Demos Overview

- Goal: Use publicly available sources
- Walk through examples
- Put the examples in context
- Homework: You review on your own as needed

Demos Overview



Yes Source Available

- `mx.controls.VideoDisplay`
- ReviewTube
- Flash FLVPlayback using Flex Component Kit for Flash CS3
- Video Conference with Flex & FMS

No Source Available

- Adobe Premiere Express – Flex w/ Flash Media Server
- Adobe Media Player – Flex/AIR
- VroomVideo.com – Flex w/ Flash Media Server



- **Flex 2 Component Explorer**
 - <http://examples.adobe.com/flex2/inproduct/sdk/explorer/explorer.html>
 - Visual Components > Loader Controls > VideoDisplay > VideoDisplay Control Example
- **Video File Hosting Options**
 - Progressive using HTTP
 - Streaming using RTMP
 - Flash Media Server (aka FMS)
 - Flash Video Streaming Service (FVSS)
 - provided by Content Delivery Network Providers (CDNs)

Video File Hosting Options

- **Progressive using HTTP**
 - No content protection (video files are downloaded to browser cache)
 - Seek dependent on percent of file downloaded
 - Example: YouTube
- **Streaming using RTMP**
 - Content protection results from absence of video file caching
 - Seek 100% on load
 - Dynamic bandwidth switching during playback
 - Examples: NBC.com, FOX.com
- **Embed not supported**

DEMO #2

Implementing Full Screen



Implementing Full Screen

- **Creating full-screen Flex applications**
by Pete deHaan

<http://blog.flexexamples.com/2007/08/07/creating-full-screen-flex-applications/>

- Flex/ActionScript Code
- HTML Wrapper Code (required!)
- **Sample file:**
 - http://labs.adobe.com/technologies/flashplayer9/fullscreendemo/backcountry_bombshells_4min_HD_1500_96.flv

- Full Screen is a major emphasis in current Flash Player development!

- Full-screen mode with hardware scaling. Probably the biggest new feature in the Flash Player Update 3. This leverages DirectX on Windows and OpenGL on OSX. Source, Tinic Uro, Software Engineer:

http://www.kaourantin.net/2007/08/what-just-happened-to-video-on-web_20.html

- Full-Screen mode with hardware scaling

http://labs.adobe.com/wiki/index.php/Flash_Player:9:Update:Full-Screen_Mode_HW



Video Codecs Supported



Codec	Flash Player Version Introduced	Primary Uses
Sorenson Spark	6	Video Conferencing, Social Media
On2 VP6	8	Our current best quality "Web Video" (low/medium/high bandwidth)
ON2 VP6 – Simple Profile	8	"HD Video" with optimized performance w/ high bitrate (e.g. from local disk)
H.264 / AAC	9.0.60	"HD Web Video" using standard codec w/ medium/high bandwidth

See <http://www.flashvideofaq.com/> to compare Sorenson Spark vs On2 VP6

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H.264 (aka MPEG4)



- Requires Flash Player 9.0.60
- No Flex or ActionScript specific syntax!
 - Just specify URL to a valid MP4 file
 - Flash Player reads the file specified
 - Flash Player 9.0.60 and higher plays H.264 format
- Sample file:
 - http://labs.adobe.com/technologies/flashplayer9/fullscreendemo/backcountry_bombshells_4min_HD_H264.mp4

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DEMO #4

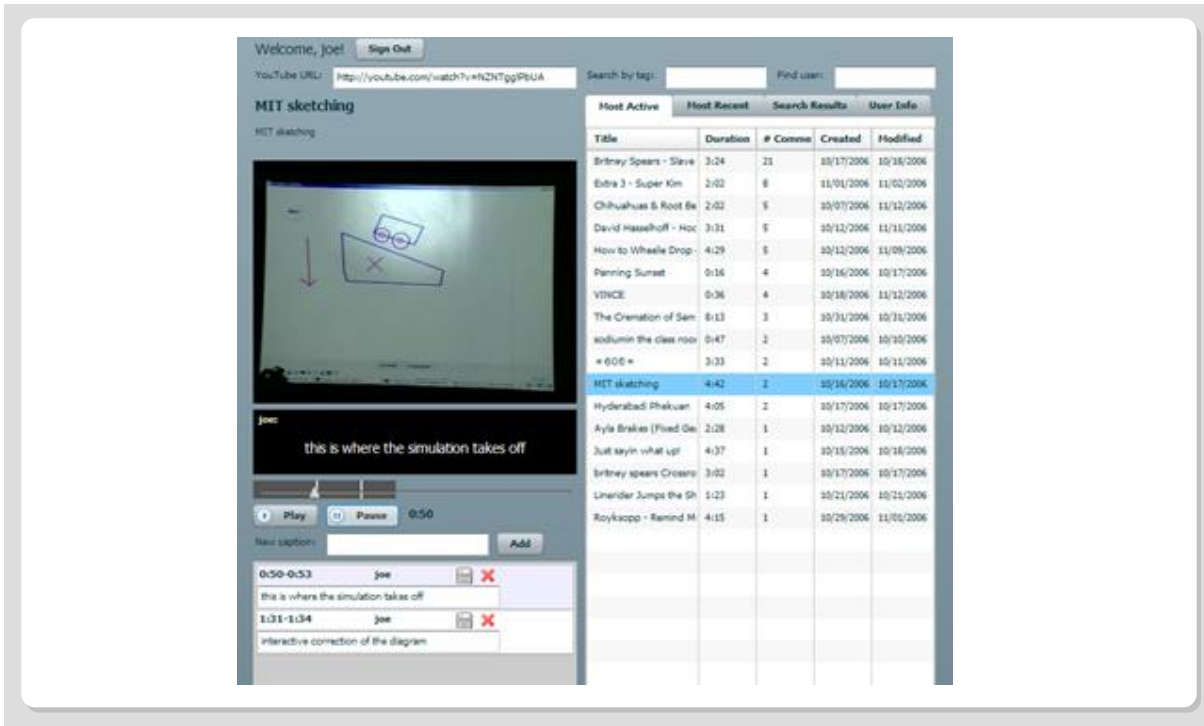
ReviewTube



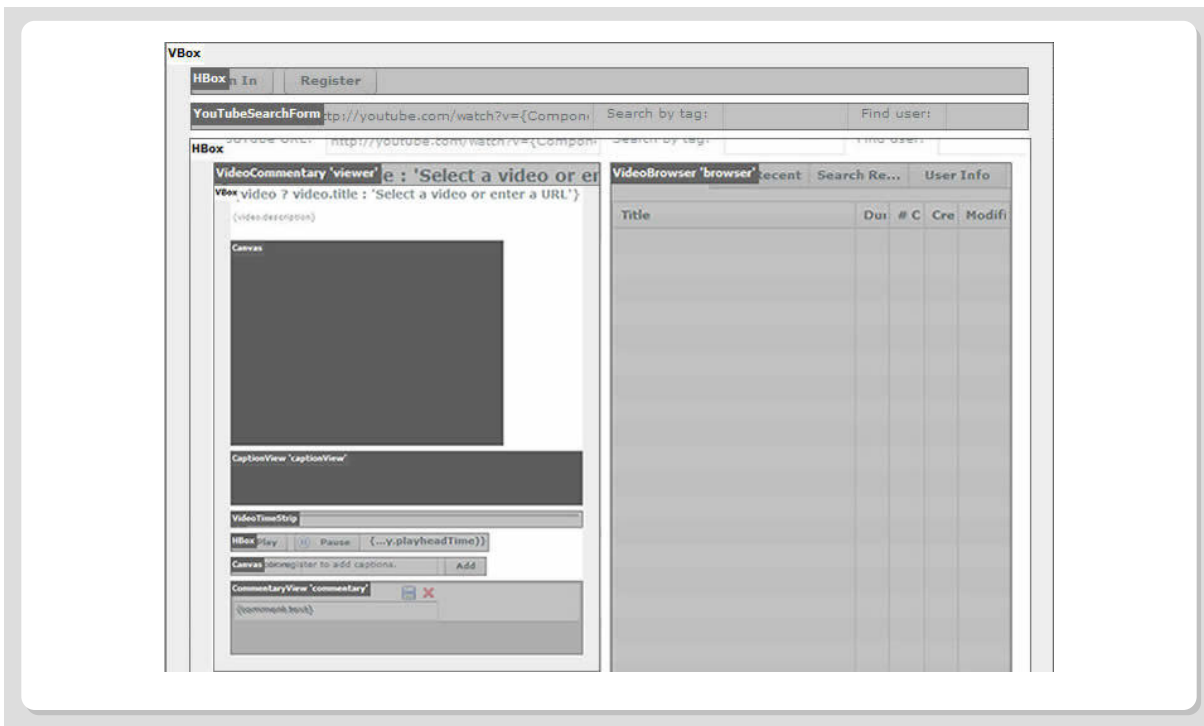
ReviewTube

- <http://www.joeberkovitz.com/reviewtube/>
 - A site that allows users to create, edit, and view time-based comments for videos hosted by YouTube.com
- Companion article:
 - "An architectural blueprint for Flex applications"
<http://www.adobe.com/devnet/flex/articles/blueprint.html>
 - Article details a high-level architecture for building Flex applications
 - Architecture called the "Model-View-Controller-Service" approach, or MVCS for short

Review Tube UI



Review Tube UI – Container View



Video Specific Elements



- Namespace
 - `xmlns:view="com.joeberkovitz.reviewtube.view.*"`
- ReviewTube.mxml > MainView.mxml > VideoCommentary.mxml >
 - YouTubeVideoDisplay.mxml
 - VideoTimeStrip.mxml
 - `<mx:Label text="{...(videoDisplay.playheadTime)}"/>`
 - `<mx:Button ... label="Play" ... />`
 - `<mx:Button ... label="Pause" ... />`
- Value Object
 - `import com.joeberkovitz.reviewtube.model.VideoInfo;`

<http://www.joeberkovitz.com/reviewtube/>

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Flash FLVPlayback Component

- Using the Flash FLVPlayback Component in Flex 2.01

<http://www.flashcomguru.com/index.cfm/2007/7/18/flvplayback-in-flex>

- Requires

- Flash CS3

- Flex

- Flex 2.01

- Flex Component Kit for Flash CS3

- http://labs.adobe.com/wiki/index.php/Flex_Component_Kit_for_Flash_CS3

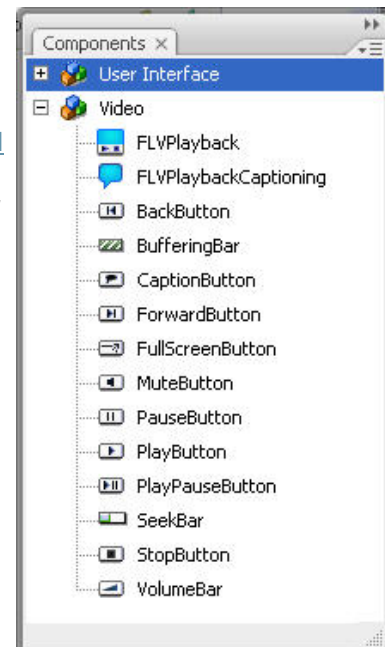
- Flex 3

- See Chapter 32 in Flex 3 Developer's Guide

- http://livedocs.adobe.com/labs/flex/3/html/swf9_040_01.html

Flash FLVPlayback Component

- Prebuilt, fully functional components for FLVPlayback
- Very thorough documentation of all functionality
 - <http://livedocs.adobe.com/flash/9.0/main/00000552.html>
- Includes a collection of predesigned *skins* for quickly and easily customizing the appearance of playback controls
- Super easy customization of predesigned skins through configuration of color and alpha values
- Allows advanced users to create their own skins
- Supports:
 - HTTP Progressive and RTMP Streaming
 - Full screen
 - Closed captions
 - Cue points (events that enable synchronization with outside text, graphics, etc.)
 - SMIL support (cases w/ multiple streams, each optimized for different bandwidths)



DEMO #6

Flex Video Conference



Video Conference with Flex & FMS

- A sample application that accompanies the Web Developer's & Designer's Journal article:
 - Video Conference with Flex & FMS
By: Renaun Erickson
<http://mxdj.sys-con.com/read/295379.htm>
Source downloadable from:
<http://renaun.com/blog/2006/10/28/139/>
- Uses Flex client side w/ Flash Media Server on server side

- Demonstrates video acquisition using Flash Player

- Uses classes in the flash packages:
 - flash.media.Video
 - flash.media.Camera
 - flash.media.microphone
 - flash.net.NetConnection
 - flash.net.NetStream

DEMO #7

Adobe Premiere Express



Adobe Premiere Express

- Licensed application
 - MTV.com
 - YouTube.com
 - Photobucket.com
- Hosted Service
- Application uses Flex client side w/ Flash Media Server on server side
- <http://remix.mtv.com/>

DEMO #8

Adobe Media Player



Adobe Media Player

- AIR application that uses Flex client side
- Video via HTTP progressive download or RTMP streaming
- Progressively downloaded videos thereafter stored locally for replay
- AIR application manages local files and user selected RSS feeds
- Developer customization of feed downloads (not the player itself)

DEMO #9

VroomVideo.com



VroomVideo.com

- Video record application
- Uses Flex client side w/ Flash Media Server on server side
- Similar to YouTube's Quick Capture which uses Flash authored SWF for video record

Q&A



Session Link & Email Contact

- Note: Links in presentation online at:
http://halcyonsolutions.net/presos/07/flexvideo_vegasflex.org
- Email: g@halcyonsolutions.net

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THE END
THANKS! 😊

