Adding Video to a Mobile Application

In this unit, you will learn how to use the device video capabilities of the Flash Lite 2 player.

Adobe

Objectives

After completing this unit, you should be able to:

- ▶Understand how Flash Lite 2 is able to render video
- ▶Use bundled video in a Flash Lite 2 Application
- ▶Load video files from a URL or the file system of a device

Using Video in Flash Lite 2

- To keep player size small (and to support a wide variety of video formats), Flash Lite 2 does not decode or render device video natively.
  - Instead, it relies on the video capabilities of the specific device in use.
  - For this reason, there are some limitations to using device video.

Limitations of device video

The limitations of device video are as follows:

- ▶You cannot rotate or skew device video (some devices support scaling)
- ▶You cannot synchronize device video with the timeline
- ▶You cannot composite or blend device video with other media. The device renders video directly to the display over any other Flash content.
- ▶You cannot control the sound volume of a video clip
- ▶Flash Video (FLV) is not supported

Using device video formats

- Some common device video formats include
  - 3GP,
  - 3G2 (or 3GPP2)
  - MPEG-4.
  - You can use Apple QuickTime Pro or other tools to convert standard video formats into these formats.
- In general, you can play any video format in your Flash Lite 2.0 application that the target device supports.
- Different devices support different video codecs and formats.

Determing device capabilities

The `System.capabilities` object supports properties describing the video abilities of the current device and has the following properties:

- `hasEmbeddedVideo`: a `true` or `false` value indicating whether the device supports embedded ("bundled") video
- `hasStreamingVideo`: a `true` or `false` value indicating whether the device supports external streaming video
- `videoMIMETypes`: an `Array` of MIME codes for the video types supported by the device

Using the System.capabilities.videoMIMETypes property

You use the `System.capabilities.videoMIMETypes` property to determine, at runtime, what video formats a device supports.

This property contains an `Array` of `String` descriptions of the video MIME types supported by the device. Each `String` in the `Array` has the following MIME format:

```
video/video-type
```

Using the System.capabilities.videoMIMETypes property

- To determine whether a given device can play a given MIME type, test the values in the `videoMIMETypes` array against the required type.

```
var supported:Boolean = false;
var requiredType:String = "video/3gp";
var types:Array = System.capabilities.videoMIMETypes;

// test all device types for the requiredType
for (var i:Number = 0; i < types.length; i++){
 if (types[i] == requiredType){
  supported = true;
  break;
 }}
```

Using the System.capabilities.videoMIMETypes property

```
// if type is supported, play the video
if (supported)
{
 device_video.play();
}
```

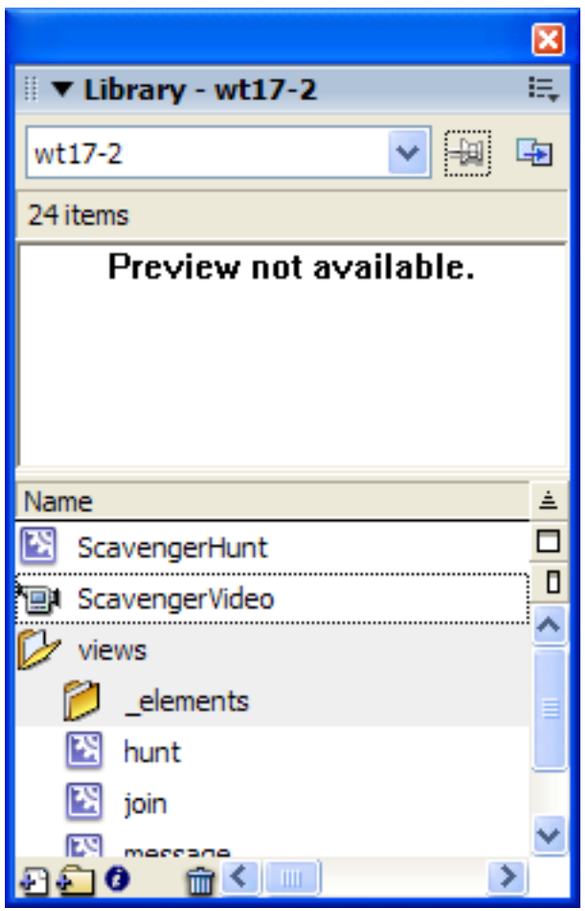
If the targeted device is known to support only a single MIME type, it will be the first element of the `Array`, and may be tested for more simply:

```
if(System.capabilities.videoMIMETypes[0] == "video/3gpp")
{
 device_video.play();
}
```

Note: recall that the first element in an ActionScript `Array` *is at index 0, not 1*

Using embedded ("bundled") device video

To use embedded video, you import a device video into your document's Library, which then becomes a `Video` object available to ActionScript.

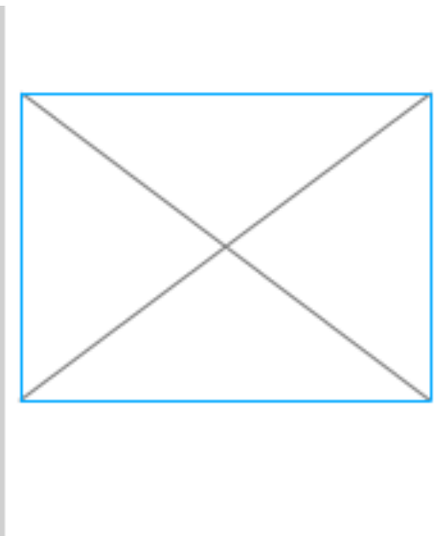


Bundled Device Video in the library

Adobe

Using embedded ("bundled") device video(continued)

Once you have imported the video file, you place an instance on the Stage and then use ActionScript to control the object.



A video instance on the Stage

When you publish your application, the authoring tool bundles the device video file into the published SWF file.

Using the ActionScript Video class

- There are several differences between the `Video` class in Flash Lite 2.x and the `Video` class in the browser and desktop version of Flash Player.
- The following methods of the `Video` class are available only in Flash Lite 2.x and not in the desktop version of Flash Player:
  - `play()`
  - `stop()`
  - `pause()`
  - `resume()`
  - `close()`

Note: the `close()` *method stops playback, clears the on-screen video, and releases any memory associated with the video*

Walkthrough 1: Using Bundled Device Video

In this walkthrough, you will perform the following tasks:

- ▶Import device video
- ▶Display video

Using External Device Video

- In addition to playing embedded ("bundled") video, you can also load and play external video files from the device's file system, or load and play from a network address.
- To play an external video file, you pass the absolute or relative file location or URL of the video file to the `play()` method of your `Video` object. In the following example, the SWF file and the 3GP file are located in the same folder on the device.

```
video.play("ocean.3gp");
```

- You can also specify a relative folder path to the SWF file, as follows:

```
video.play("folder1/ocean.3gp");
```

Using External Device Video

- Depending on the device, you may also use the `file://` protocol to play a video file at a specific location, as follows:

```
video.play("file://c:/folder1/ocean.3gp");
```

Note: Not all devices support the `file://` *protocol. Be sure to test your application on all target devices if you use this protocol.*

- You can also load a video file, via HTTP, from a network address, as follows:

```
video.play("http://www.adobe.com/ocean.3gp");
```

Note: Flash Lite sandbox security applies to all files loaded via HTTP. A `crossdomain.xml` *policy file would be required to permit retrieval of video files, via HTTP, from a domain other than the one from which the SWF loaded.*

Adobe

Playing device video in the emulator

The Flash Lite emulator uses QuickTime Player to render device video when testing in the Flash authoring tool.

If your device video does not play in the Flash Lite emulator:

- ▶Upgrade to the latest version of QuickTime Player
- ▶If available, install a third-party video codec (short for compressor-decompressor) that supports the video format you're using
- ▶Test on the target device

Walkthrough 2: Using External Video

In this walkthrough, you will perform the following tasks:

- ▶Create a video object
- ▶Load the video

Summary

- Flash Lite relies on the video capabilities of the current device.
- Device video plays over Flash content, with little control from Flash.
- At runtime, video support can be determined using the hasEmbeddedVideo, hasStreamingVideo, and videoMIMETypes properties of the System.capabilities object.
- System.capabilities.videoMIMETypes is an Array holding MIME type values for each video format supported by the device.
- Whether video is embedded ("bundled") with the SWF, or exists externally, it is controlled using the `play()`, `stop()`, `pause()`, and `resume()` methods of the `Video` class.
- The `close()` method stops playback, clears the on-screen video, and releases memory used by the video.