DiaDrawScreenCast ANE Source Code

Manual

Contents

What is DiaDrawScreenCast.ane?

What does it do?

DiaDrawScreenCast.ane is an AIR Native Extension for iOS which allows you to make a video recording of a given DisplayObject in your app and mix in pre-recorded sound. You have the option of encoding the videos with H.256 or JPEG and selecting video quality. See VideoSettings for full details.

How do you use DiaDrawScreenCast.ane?

Include **DiaDrawScreenCast.ane** in your Flash or Flex project.

Make an instance of the ScreenRecorder class (com.diadraw.extensions.ScreenRecorder) and use that to start, pause, resume or stop a recording.

Before you start a recording, make an instance of the VideoSettings class (com.diadraw.extensions.VideoSettings) and leave it set up by default or modify how your video should be recorded. VideoSettings lets you set:

- video frame size
- scale factor and scale mode (fill/fit/crop) for the DisplayObject in the video
- frame rate of the recorded video
- average video bit rate
- type of video encoding
- video encoding quality
- the path to an audio file, if you want to mix sound; and the following audio settings:
    - audio sample rate
    - audio bit rate
    - number of audio channels
    - video composition quality of the mixed video
    - offset in seconds, if you need the sound to start at a certain point in the video
    - audio looping and cut-off

Choose a name and path for your video file and call startRecording() on your ScreenRecorder instance. When you are ready to finish recording, decide whether you would also like a copy saved to the device's Camera Roll and call finishRecording().

Listen for ScreenRecorderEvent.VIDEO_SAVED to get notified when the video file has been written successfully.

Listen for ScreenRecorderEvent.ERROR to get notified about any issues during the recording or saving.

Example Code

Tip: You will find a complete example in the companion app. See **Views.HomeView.mxml**.

Instantiate ScreenRecorder

```
import com.diadraw.extensions.ScreenRecorder;
import com.diadraw.extensions.ScreenRecorderEvent;
import com.diadraw.extensions.VideoSettings;

private function initializeScreenRecorder() : void
{
      m_screenRecorder = new ScreenRecorder();
      m_screenRecorder.addEventListener(
                  ScreenRecorderEvent.VIDEO_SAVED, onVideoSaved );
      m_screenRecorder.addEventListener(
                  ScreenRecorderEvent.ERROR, onScreenCastError );
      m_screenRecorder.addEventListener(
                  ScreenRecorderEvent.PROGRESS, onVideoSaveProgress );
}
```

Start recording a video

```
private function startRecording() : void
{
      // 1. Get the container that will be recorded
      var containerToRecord : DisplayObject = groupToRecord;

      // 2. ... and the optimal video size,
      // based on the container size and the video codec
      // When using VideoCodecH264 the video width must be
      // one of the standard video widths: 320, 640, etc.
      // When using VideoCodecJpeg both the width and the height of the video must be
      //  one of the standard ones.
      var videoCodec : Number = VideoSettings.VideoCodecJpeg; //VideoCodecH264;
      var videoSize : Point =
            VideoSettings.getStandardVideoSize(
                  containerToRecord.width,
                  containerToRecord.height,
                  videoCodec );

      // 3. If the video size isn't the same as the container's,
      // decide whether we want the container centered in the video frame
      // (or offset in any way)
      var containerOffsetInFrame : Point = new Point();

      // 4. Configure the rest of the video settings
      var videoSettings : VideoSettings = new VideoSettings();

      videoSettings.videoCodec = videoCodec; // Can be VideoSettings.VideoCodecH264
                                             // or VideoCodecJpeg.
      videoSettings.jpegQuality = 0.5;  // VideoSettings.VideoCodecJpeg only.
                                        // Takes values between 0.0 and 1.0.
                                        // Specifies JPEG coded quality.
```

```
    videoSettings.h264Quality = VideoSettings.H264Main32;
                                 // VideoSettings.VideoCodec264 only
                                 // Takes the following values:
                                 // VideoSettings.H264Baseline30
                                 // VideoSettings.H264Baseline31
                                 // VideoSettings.H264Baseline41
                                 // VideoSettings.H264BaselineAuto
                                        // Supported on iOS > 7, defaults to
                                        // VideoSettings.H264Baseline30
                                        // on earlier iOS versions
                                 // VideoSettings.H264Main30
                                 // VideoSettings.H264Main31
                                 // VideoSettings.H264Main32
                                 // VideoSettings.H264Main41
                                 // VideoSettings.H264MainAuto
                                        // Supported on iOS > 7, defaults to
                                        // VideoSettings.H264Baseline30
                                        // on earlier iOS versions
                                 // VideoSettings.H264High40
                                        // Supported on iOS > 6, defaults to
                                        // VideoSettings.H264Main31
                                        // on earlier iOS versions
                                 // VideoSettings.H264High41
                                        // Supported on iOS > 6, defaults to
                                        // VideoSettings.H264Main31
                                        // on earlier iOS versions
                                 // VideoSettings.H264HighAuto
                                        // Supported on iOS > 7, defaults to
                                        // VideoSettings.H264Main31
                                        // on earlier iOS versions

    videoSettings.framesPerSecond = 15;          // Frames per second
    videoSettings.videoAverageBitRate = 960000;  // H264 only, bits per second

    // This sets the quality preset to be used
    // if the video is mixed with sound after it's been recorded
    // Use one of the following:
           // VideoSettings.VideoCompositionPresetLowQuality
           // VideoSettings.VideoCompositionPresetMediumQuality
           // VideoSettings.VideoCompositionPresetHighestQuality
    videoSettings.videoCompositionQuality =
                        VideoSettings.VideoCompositionPresetHighestQuality;

    // If the recorded container and the video frame are different sizes,
    // videoSettings.scale mode can set scaling, so that the container
    // either fills the video frame or fits in it.
    // Use VIDEO_SCALE_NONE, VIDEO_SCALE_FIT_W, VIDEO_SCALE_FIT_H
    // or VIDEO_SCALE_FIT_ALL.
    videoSettings.scaleMode = VideoSettings.VIDEO_SCALE_NONE;

    // scaleFactor allows you to scale the container with respect to the video frame
    // and takes x and y factors.
    // Note: scaleFactor takes priority over scaleMode.
    // Set scaleFactor to (1, 1) for no scaling or for scaleMode to have effect.
    videoSettings.scaleFactor = new Point( 1, 1 );


    // Optional audio settings
    var inputAudioFile : File =
           File.applicationDirectory.resolvePath( "assets/exam_piece.m4a" );
```

```
	videoSettings.inputAudioFilePath = inputAudioFile.nativePath;
	// Set inputAudioFilePath = null to disable adding sound
	videoSettings.audioOffsetSeconds = 0;
	videoSettings.loopAudio = false;
	videoSettings.cutOffAudioAtEndOfVideo = true;


	// Set saveDebugFrames to true to have every 10th frame
	// saved to CameraRoll - for debugging purposes only
	var saveDebugFrames : Boolean = false;

	if ( m_screenRecorder.startRecording( containerToRecord,
	                                      videoSize.x,
	                                      videoSize.y,
	                                      containerOffsetInFrame,
	                                      videoSettings,
	                                      saveDebugFrames ) )
	{
		m_isRecording = true;

		m_hasRecordedVideo = false;
		title = "Recording in progress...";
	}
	else
	{
		title = "ERROR: Could not start recording";
	}
}
```

Pause a recording

```
private function pauseRecording() : void
{
	m_screenRecorder.pauseRecording();
	title = "Recording paused";

	btnPause.label = "Restart";
}
```

Resume a paused recording

```
private function pauseRecording() : void
{
	m_screenRecorder.pauseRecording();
	title = "Recording paused";

	btnPause.label = "Restart";
}
```

Finish recording and save video

```
private function finishRecording() : void
{
	// Note: You can save the file to a path of your choice and/or to Camera Roll.
	// You can also choose not to save it anywhere -
	// a bit pointless, but it's an option.

	// 1. If you want the file saved to a specific path,
	// pass that path as the second argument
	// in the m_screenRecorder.finishRecording() call.
```

```
        // If you don't want to save the file to a specific path,
        // leave that second argument out:
        // m_screenRecorder.finishRecording( true )
        // will only save a copy to Camera Roll.

        // 1.1. If saving the file to a path of your choice,
        // make sure any subfolders on that path already exist:
        var subDir : File = File.documentsDirectory.resolvePath( "diadraw/videos" );
        if ( !subDir.exists )
        {
                subDir.createDirectory();
        }

        // 1.2. Get the full path to the file, including the file name.
        var videoFile : File =
                File.documentsDirectory.resolvePath( "diadraw/videos/screenCast.mp4" );
        var saveVideoToPath : String = videoFile.nativePath;

        // 2. Do you want a copy in Camera Roll?
        var saveVideoToCameraRoll : Boolean = true;

        // 3. Now call finishRecording() in the ANE:
        m_screenRecorder.finishRecording( saveVideoToCameraRoll, saveVideoToPath );

        m_isRecording = false;
        title = "Saving video file...";
}
```

Get notified about progress, when the video is being saved

```
private function onVideoSaveProgress( _event : ScreenRecorderEvent ) : void
{
        title = "Encoding in progress... " + _event.progressPercent + "%";
}
```

Get notified when the video file has been saved

```
private function onVideoSaved( _event : ScreenRecorderEvent ) : void
{
        title = "Video saved";
        m_hasRecordedVideo = true;
}
```

Process errors

```
private function onScreenCastError( _event : ScreenRecorderEvent ) : void
{
        // deal with errors from the native extension
        trace( "ScreenCastNativeExtension error: " + _event.message );
}
```

API

ScreenRecorder class

Package com.diadraw.extensions

ScreenRecorder() constructor

```
public function ScreenRecorder( _target : IEventDispatcher = null )
```

Creates a new instance of ScreenRecorder.

isSupported() method

```
public function isSupported() : Boolean
```

Checks if screen recording is supported on the current platform.

startRecording() method

```
public function startRecording(  _objectToRecord      : DisplayObject,
                                 _videoWidth          : int,
                                 _videoHeight         : int,
                                 _objectOffsetInFrame : Point,
                                 _videoSettings       : VideoSettings,
                                 _saveDebugFrames     : Boolean = false )  : Boolean
```

Starts the video recording.

Parameters

_objectToRecord - a DisplayObject that will be recorded in the video
_videoWidth - the width of the final video
_videoHeight - the height of the final video
_objectOffsetInFrame - (x, y) offset for the DisplayObject in the video frame
_videoSettings, see com.diadraw.extensions.VideoSettings
_saveDebugFrames - optional, defaults to false; set to true to have every 10th frame output to Camera Roll for inspection

Returns

true if the recording started successfully, **false** otherwise.

See also

VideoSettings.getStandardVideoSize() for picking an optimal video size for your chosen encoder.

restartRecording() method

```
public function restartRecording() : void
```

Resumes a paused video recording. Listen for ScreenRecorderEvent.RECORDING_RESUMED to get notified when the video recording has started.

pauseRecording() method

```
public function pauseRecording() : void
```

Pauses the video recording. Listen for ScreenRecorderEvent.RECORDING_PAUSED to get notified when the video recording has paused successfully.

finishRecording() method

```
public function finishRecording( _shouldSaveToCameraRoll : Boolean = false,
                                 _saveFileToPath         : String = null ) : void
```

Stops the recording and saves the video to a file. Listen for ScreenRecorderEvent.VIDEO_SAVED to get notified when the video file has been written successfully.

Parameters

_shouldSaveToCameraRoll - optional; set to true to have the video saved to Camera Roll, as well as to the path specified in startRecording();
_saveFileToPath - optional; set to the path where you would like the video file to be stored (other than in camera roll).

ScreenRecorderEvent class

package com.diadraw.extensions

ScreenRecorderEvent.VIDEO_SAVED event type

Emitted when the video file has finished saving.

ScreenRecorderEvent.RECORDING_PAUSED event type

Emitted when the recording of the video has been paused.

ScreenRecorderEvent.RECORDING_RESUMED event type

Emitted when a paused video recording has been resumed.

ScreenRecorderEvent.ERROR event type

Emitted when there has been a problem with the video recording. Check the ScreenRecorderEvent **message** property for details on the problem.

ScreenRecorderEvent.INFO event type

Listen to this event to get information at various points of the recording. Check the ScreenRecorderEvent **message** property for details.

ScreenRecorderEvent.PROGRESS event type

Listen to this event to get updates on the progress of video saving after you have called finishRecording(). Check the ScreenRecorderEvent **progressPercent** property for the percent value.

message property

`message : String`

Contains information about the event.

progressPercent property

`progressPercent : Number`

Contains the percentage of work done when saving the final video as a number from 0 to 100.

VideoSettings class

package com.diadraw.extensions

getStandardVideoSize() static method

```
public static function getStandardVideoSize(   _preferredWidthPix : Number,
                                                _preferredHeightPix : Number,
                                                _videoCodec : Number ) : Point
```

Chooses an optimal video frame size for a given codec. The result size is the closest possible to a preferred frame size you specify.

Parameters

_preferredWidthPix - your preferred frame width in pixels
_preferredHeightPix - your preferred frame height in pixels
_videoCodec - the video codec you will use, possible values: VideoSettings.VideoCodecH264 or VideoSettings.VideoCodecJpeg

Returns

A **flash.geom.Point** object, where flash.geom.Point.x represents the video frame **width** and flash.geom.Point.y represents the video frame **height.**

VideoSettings() constructor

```
public function VideoSettings(
     _frameW                        : int = DEFAULT_FRAME_W,
     _frameH                        : int = DEFAULT_FRAME_H,
     _framesPerSecond               : int = DEFAULT_FRAMES_PER_SECOND,
     _videoAverageBitRate           : int = DEFAULT_VIDEO_AVG_BIT_RATE,
     _audioSampleRate               : Number = DEFAULT_AUDIO_SAMPLE_RATE,
     _audioBitRate                  : int = DEFAULT_AUDIO_BIT_RATE,
     _audioChannels                 : int = DEFAULT_AUDIO_CHANNELS,
     _videoCodec                    : Number = DEFAULT_VIDEO_CODEC,
     _jpegQuality                   : Number = DEFAULT_JPEG_QUALITY,
     _h264Quality                   : Number = DEFAULT_H264_QUALITY,
     _videoCompositionQuality       : Number = DEFAULT_VIDEO_COMPOSITION_QUALITY,
     _inputAudioFilePath            : String = null,
     _audioOffsetSeconds            : int = 0,
     _loopAudio                     : Boolean = true,
     _cutOffAudioAtEndOfVideo       : Boolean = true )
```

Creates an instance of VideoSettings.

Parameters

_frameW - width of the recorded video in pixels; default value: DEFAULT_FRAME_W = 640 pixels

_frameH - width of the recorded video in pixels; default value: DEFAULT_FRAME_H = 480 pixels

_framesPerSecond - frame rate of the recorded video; DEFAULT_FRAMES_PER_SECOND = 10

_videoAverageBitRate - average bit rate of the recorded video; default value: DEFAULT_VIDEO_AVG_BIT_RATE = 960000

_audioSampleRate - sample rate for the audio in the final video, in Herz; default value: 12000.0 Hz; has effect only when _inputAudioFilePath is set to a valid file

_audioBitRate - bit rate per audio channel; default value = DEFAULT_AUDIO_BIT_RATE = 64000; has effect only when _inputAudioFilePath is set to a valid file

_audioChannels - number of audio channels in the final video; default value = DEFAULT_AUDIO_CHANNELS = VideoSettings.AudioChannelsStereo; has effect only when _inputAudioFilePath is set to a valid file

_videoCodec - encoder to be used for the recorded video; choose between VideoSettings.VideoCodec264 and VideoSettings.VideoCodecJpeg; default value = DEFAULT_VIDEO_CODEC = VideoSettings.VideoCodec264

_jpegQuality - quality of the JPEG encoding, where 0 = lowest quality 1.0 = highest quality; default value: DEFAULT_JPEG_QUALITY = 0.3; has effect only when videoCodec is set to VideoSettings.VideoCodecJpeg;

_h264Quality - quality of the H.264 encoding; see the h264Quality property for a list of values; default value: DEFAULT_H264_QUALITY = H264Baseline30;has effect only when videoCodec is set to VideoSettings.VideoCodec264;

_videoCompositionQuality - quality preset to be used if the video is mixed with sound after it's been recorded; default value: DEFAULT_VIDEO_COMPOSITION_QUALITY = VideoCompositionPresetMediumQuality; has effect only when _inputAudioFilePath is set to a valid file

_inputAudioFilePath - path to a local audio file (.mp3, .wav, .m4a) to be mixed in the final video; default value: null = no audio

_audioOffsetSeconds - offset in seconds from the start of the video file where audio shoud begin; default value: 0 seconds; has effect only when _inputAudioFilePath is set to a valid file

_loopAudio - a flag, determining whether the audio file should be looped if it’s shorter than the final video; defaul value: true; has effect only when _inputAudioFilePath is set to a valid file

_cutOffAudioAtEndOfVideo - a flag, determining whether an audio file, which is longer than the final video, should be cut off at the end of the video; defaul value: true; has effect only when _inputAudioFilePath is set to a valid file

frameWidth property

`frameWidth : int`

Width of the recorded video in pixels. See getStandardVideoSize() for choosing an optimal video size.

frameHeight property

`frameHeight : int`

Height of the recorded video in pixels. See getStandardVideoSize() for choosing an optimal video size.

videoAverageBitRate property

`videoAverageBitRate : int`

Average bit rate of the recorded video.

audioSampleRate property

`audioSampleRate : Number`

A sample rate, in hertz, expressed as a floating point value.
Has effect only when **inputAudioFilePath** is set to a valid file.

audioBitRate property

`audioBitRate : int`

Bit rate per audio channel.
Has effect only when **inputAudioFilePath** is set to a valid file.

videoCodec property

`videoCodec : Number`

Encoder to be used for the recorded video.

Possible values:

- **VideoSettings.VideoCodec264**
- **VideoSettings.VideoCodecJpeg**.

jpegQuality property

`jpegQuality : Number`

VideoSettings.VideoCodecJpeg only. Specifies JPEG coded quality.

Use values between **0.0** and **1.0**, where 0.0 = lowest quality, 1.0 = highest quality.

h264Quality property

`h264Quality : Number`

VideoSettings.VideoCodec264 only. Specifies the H.264 encoding quality.

Possible values in increasing level of quality:

- **VideoSettings.H264Baseline30**
- **VideoSettings.H264Baseline31**
- **VideoSettings.H264Baseline41**
- **VideoSettings.H264BaselineAuto** - supported on iOS 7 and newer
- **VideoSettings.H264Main30**
- **VideoSettings.H264Main31**
- **VideoSettings.H264Main32**
- **VideoSettings.H264Main41**
- **VideoSettings.H264MainAuto** - supported on iOS 7 and newer
- **VideoSettings.H264High40** - supported on iOS 6 and newer
- **VideoSettings.H264High41** - supported on iOS 6 and newer
- **VideoSettings.H264HighAuto** - supported on iOS 7 and newer

audioChannels property

`audioChannels : Number`

Determines the audio channel configuration in the recorded video.

Has effect only when **inputAudioFilePath** is set to a valid file.

Possible values:

- **VideoSettings.AudioChannelsMono**
- **VideoSettings.AudioChannelsStereo.**

framesPerSecond property

`framesPerSecond : Number`

Determines the frame rate of the recorded video in frames per second.

videoCompositionQuality property

`videoCompositionQuality : Number`

Sets the quality preset to be used if the video is mixed with sound after it's been recorded.

Has effect only when **inputAudioFilePath** is set to a valid file.

Possible values:

- **VideoSettings.VideoCompositionPresetLowQuality**
- **VideoSettings.VideoCompositionPresetMediumQuality**
- **VideoSettings.VideoCompositionPresetHighestQuality**

scaleMode property

`scaleMode : Number`

Determines the scaling of the DisplayObject in the video frame when a **scaleFactor** has been set.
Possible values:

- **VideoSettings.VIDEO_SCALE_NONE**
- **VideoSettings.VIDEO_SCALE_FIT_W**
- **VideoSettings.VIDEO_SCALE_FIT_H**
- **VideoSettings.VIDEO_SCALE_FIT_ALL**

scaleFactor property

`scaleFactor : Point`

Determines the scaling of the DisplayObject in the video frame.

inputAudioFilePath property

`inputAudioFilePath : String`

Determines the path to the audio file that should be mixed in the video.
Leave to null, if you don't want to use audio.

audioOffsetSeconds property

`audioOffsetSeconds : int`

Offset in seconds from the start of the video file where audio shoud begin.
Has effect only when **inputAudioFilePath** is set to a valid file.

loopAudio property

`loopAudio : Boolean`

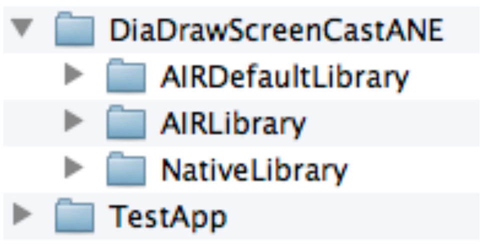
A flag, determining whether an audio file, which is longer than the final video, should be cut off at the end of the video.
Has effect only when **inputAudioFilePath** is set to a valid file.

cutOffAudioAtEndOfVideo property

`cutOffAudioAtEndOfVideo : Boolean`

A flag, determining whether an audio file, which is longer than the final video, should be cut off at the end of the video.
Has effect only when **inputAudioFilePath** is set to a valid file.

The source code package



In the source code package you have downloaded there are four projects, located in the following folders:

•**DiaDrawScreenCastANE/AIRLibrary** - the AIR interface of the ANE

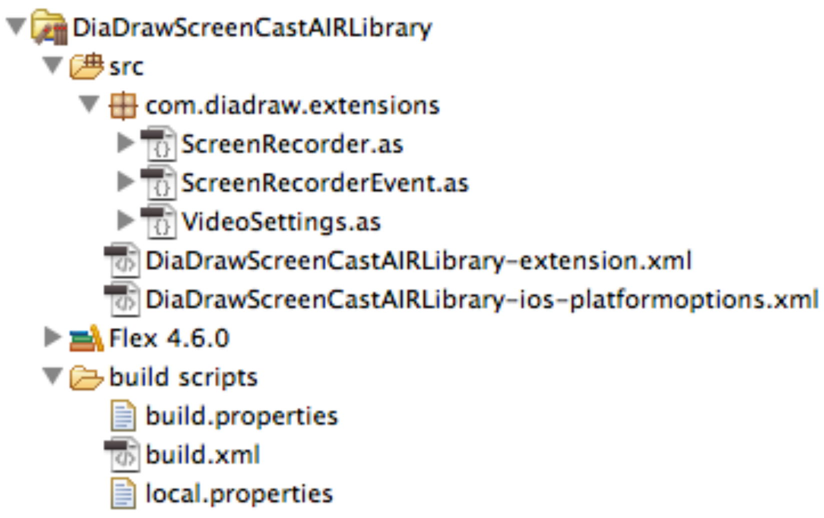
•**DiaDrawScreenCastANE/AIRDefaultLibrary** - a default implementation of the AIR interface for simulator support

- **DiaDrawScreenCastANE/NativeLibrary/ios/DiaDrawScreenCastiOS** - the Xcode project with source code for building the native library
- **TestApp/Flex** - a Flash Builder (Flex) application project which demonstrates the use of the aNE

On the following pages we'll have a look at what's in each of these project and where relevant bits of code are.

AIRLibrary

This is a Flash Builder Library project, which contains the AIR interface of the ANE, extension descriptors and build scripts.



```
▼ DiaDrawScreenCastAIRLibrary
  ▼ src
    ▼ com.diadraw.extensions
      ▶ ScreenRecorder.as
      ▶ ScreenRecorderEvent.as
      ▶ VideoSettings.as
      DiaDrawScreenCastAIRLibrary-extension.xml
      DiaDrawScreenCastAIRLibrary-ios-platformoptions.xml
  ▶ Flex 4.6.0
  ▼ build scripts
      build.properties
      build.xml
      local.properties
```

ANE interface

ScreenRecorder.as - contains an implementation of the class that does most of the work for recording the screen. See ScreenRecorder class.

ScreenRecorderEvent.as - a class for handling events from the ANE. See ScreenRecorderEvent.

VideoSettings.as - a convenience class for setting up the quality of the video recording. See VideoSettings.

Extension descriptors

DiaDrawScreenCastAIRLibrary-extension.xml - an extension descriptor, set up for building an iOS ANE.

DiaDrawScreenCastAIRLibrary-ios-platformoptions.xml - iOS-specific descriptor with linker instructions.

Build scripts

Note: See Building the ANE for instructions on how to customize and use the build scripts.

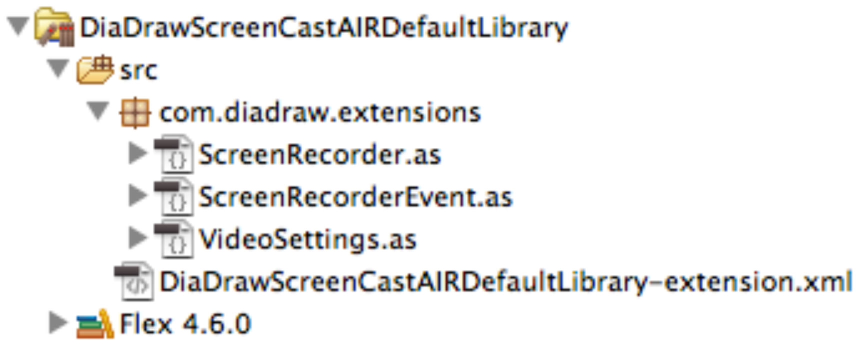
build.xml - an Ant script with targets for cleaning and building the native library, cleaning and building the AIR library (with or without simulator support) and packaging the ANE.

build.properties - a configuration file with file names and paths that build.xml needs for building and packaging the ANE.

local.properties - a configuration file with paths to the AIR SDK toolchain. Replace these with paths in your setup.

AIRDefaultLibrary

This Flash Builder Library project mirrors the AIRLibrary project. Its source files have the same names and API as the ones in AIRLibrary, except the API in the default implementation doesn't do much. Its sole purpose is to provide an ANE interface that runs in the AIR simulator.



One file that's worth noting here is the extension descriptor:

DiaDrawScreenCastDefaultLibrary-extension.xml - this descriptor file is used when building an ANE with simulator support.

NativeLibrary

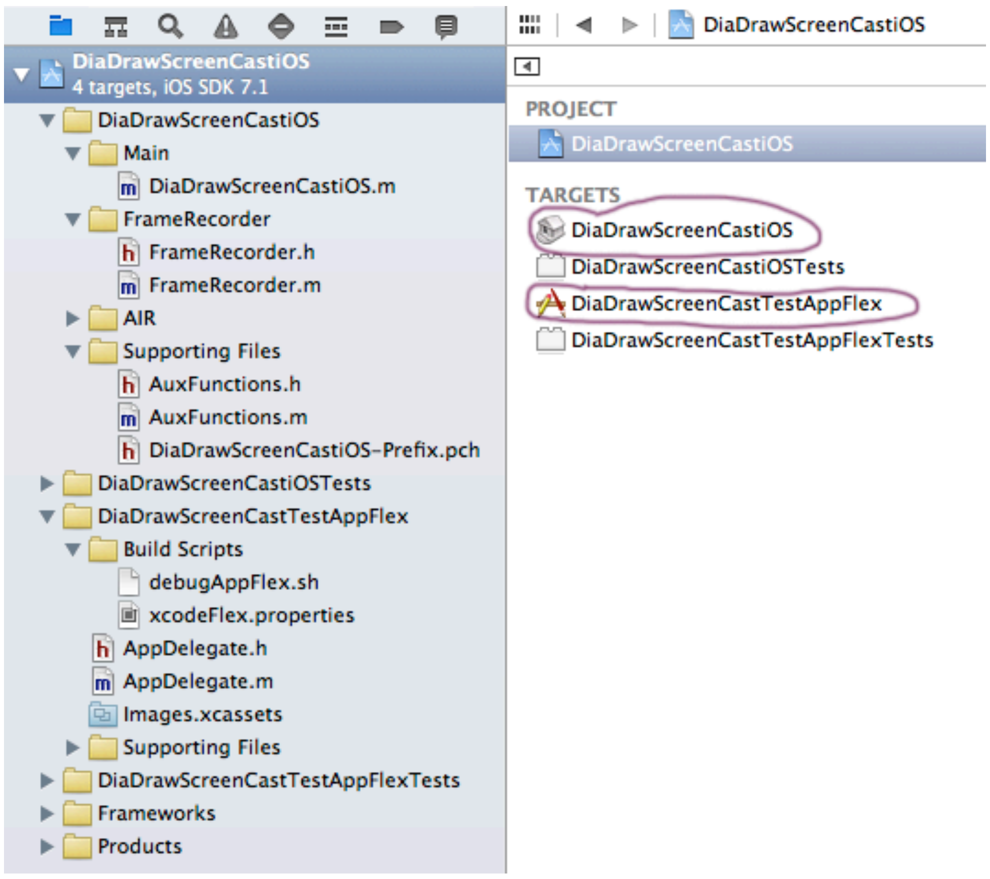
The main Xcode project file is located in

DiaDrawScreenCastANE/NativeLibrary/ios/DiaDrawScreenCastiOS/ DiaDrawScreenCastiOS.xcodeproj

and contains two targets:

DiaDrawScreenCastiOS - the native library project

DiaDrawScreenCastTestAppFlex - an empty app project, set up for debugging the native library on the device, when run in the accompanying Flex test application, **TestApp/Flex.**



```
▼ DiaDrawScreenCastiOS
  4 targets, iOS SDK 7.1
  ▼ DiaDrawScreenCastiOS
    ▼ Main
        DiaDrawScreenCastiOS.m
    ▼ FrameRecorder
        FrameRecorder.h
        FrameRecorder.m
    ▶ AIR
    ▼ Supporting Files
        AuxFunctions.h
        AuxFunctions.m
        DiaDrawScreenCastiOS-Prefix.pch
  ▶ DiaDrawScreenCastiOSTests
  ▼ DiaDrawScreenCastTestAppFlex
    ▼ Build Scripts
        debugAppFlex.sh
        xcodeFlex.properties
      AppDelegate.h
      AppDelegate.m
      Images.xcassets
    ▶ Supporting Files
  ▶ DiaDrawScreenCastTestAppFlexTests
  ▶ Frameworks
  ▶ Products
```

```
DiaDrawScreenCastiOS

PROJECT
  DiaDrawScreenCastiOS

TARGETS
  DiaDrawScreenCastiOS
  DiaDrawScreenCastiOSTests
  DiaDrawScreenCastTestAppFlex
  DiaDrawScreenCastTestAppFlexTests
```

Source code

DiaDrawScreenCastiOS.m - contains the AIR interface of the native library, which sets up an extension context and exposes calls to AIR.

FrameRecorder.m and **FrameRecorder.h** - define the class that does the actual work of receiving video frames and audio files and composing video.

AuxFunctions.m and **AuxFunctions.h** - contain helper functions that are used by FrameRecorder.

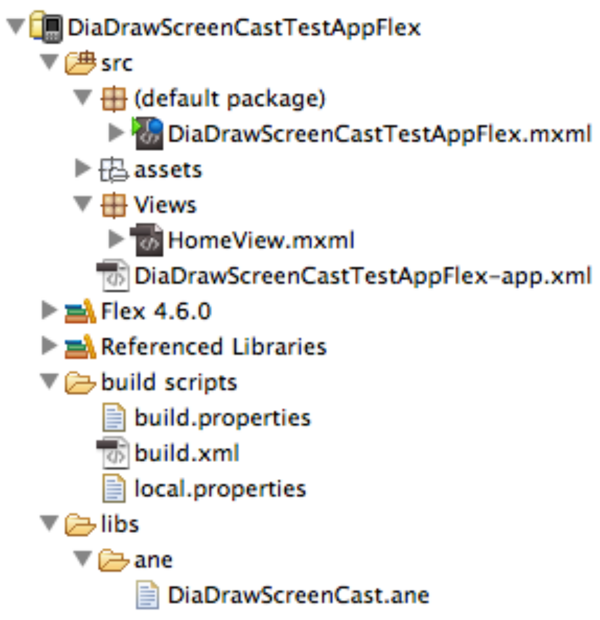
Debugging of the native code

Inside the test app target, **DiaDrawScreenCastTestAppFlex**, there is a shell script, **debugAppFlex.sh**, which will build the demo Flex app and place its relevant files where Xcode can find them in order to debug the native side of the extension.

You shouldn't have to modify the **debugAppFlex.sh** shell script. Instead, customize the configuration file that the script uses: **xcodeFlex.properties**. This one contains paths to the demo app and the app's build scripts, which are described in the next section.

TestApp

This is a Flash Builder Mobile project, meant to demonstrate the use of the ANE.



```
▼ DiaDrawScreenCastTestAppFlex
  ▼ src
    ▼ (default package)
      ▶ DiaDrawScreenCastTestAppFlex.mxml
    ▶ assets
    ▼ Views
      ▶ HomeView.mxml
      DiaDrawScreenCastTestAppFlex-app.xml
  ▶ Flex 4.6.0
  ▶ Referenced Libraries
  ▼ build scripts
      build.properties
      build.xml
      local.properties
  ▼ libs
    ▼ ane
        DiaDrawScreenCast.ane
```

Source code

The demo source code is located in **View/HomeView.mxml**.

Build scripts

The project contains convenience Ant scripts for building, packaging and installing the demo app on an iOS device. The scripts can also optionally rebuild the ANE, so you can quickly test a change in your native or AIR code in the native extension, without having to rebuild it separately.

These same scripts are referred to from the Xcode project build script, described in the previous section.

build.xml - an Ant script with targets for cleaning and building the app and installing it on an iOS device. It also contains a target for rebuilding the ANE.

build.properties - a configuration file with file names and paths that build.xml needs for building and packaging the demo app.

local.properties - a configuration file with paths to the AIR SDK toolchain. Replace these with paths in your setup.

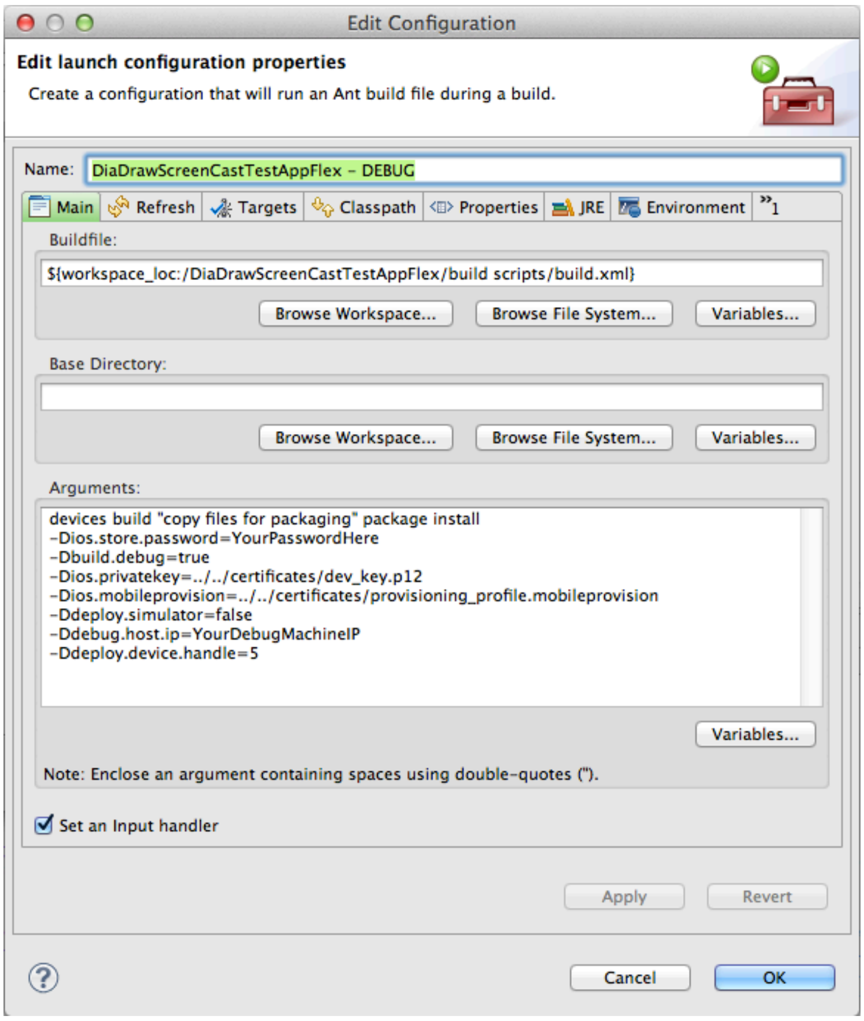
Setting up an automatic builder in Flash Builder

To configure Flash Builder to use the build scripts, so you can have the ANE and app rebuilt and installed on your device when you press Run or Debug, select **DiaDrawScreenCastTestAppFlex** in Flash Builder and open **Project** > **Properties**. Select **Builders**, then click **New…** to create a new **Ant Builder**.

Inside the **Edit launch configuration properties** dialog click Browse Workspace to navigate to **DiaDrawScreenCastTestAppFlex/build scripts/** and select **build.xml**.

Then, under Arguments, paste the following and replace the highlighted values to match your setup:

```
devices build "copy files for packaging" package install
-Dios.store.password=YourP12CertificatePassword
-Dbuild.debug=true
-Dios.privatekey=../../path/to/your/dev_key.p12
-Dios.mobileprovision=../../path/to/your/provisioning_profile.mobileprovision
-Ddeploy.simulator=false
-Ddebug.host.ip=YourDebugMachineLocalIP
-Ddeploy.device.handle=YourDeviceHandle
```



Name: DiaDrawScreenCastTestAppFlex - DEBUG

Buildfile: ${workspace_loc:/DiaDrawScreenCastTestAppFlex/build scripts/build.xml}

Base Directory:

Arguments:

```
devices build "copy files for packaging" package install
-Dios.store.password=YourPasswordHere
-Dbuild.debug=true
-Dios.privatekey=../../certificates/dev_key.p12
-Dios.mobileprovision=../../certificates/provisioning_profile.mobileprovision
-Ddeploy.simulator=false
-Ddebug.host.ip=YourDebugMachineIP
-Ddeploy.device.handle=5
```

Note: Enclose an argument containing spaces using double-quotes (").

Note: The device handle for your iPhone or iPad changes every time you plug a device in. To find out what it is, set up a new builder using the same steps outlined above, but in its **Arguments** field put only

devices

This will run the devices target and will show you your device ID in the Flash Builder console.

Building the ANE

If you have purchased the source code for **DiaDrawScreenCast.ane**, you have the option of modifying the extension to meet your specific needs.

Here is how to build it.

Modify local.properties

Open **DiaDrawScreenCastANE/AIRLibrary/build scripts/local.properties** and set IOS_SDK and FLEX_HOME to point to the SDK installs on your machine:

```
IOS_SDK=/Applications/Xcode.app/Contents/Developer/Platforms/iPhoneOS.platform/
Developer/SDKs/iPhoneOS7.0.sdk

FLEX_HOME=/Applications/Adobe Flash Builder 4.6/sdks/4.6.0

MXMLC=${FLEX_HOME}/bin/mxmlc

ADT=${FLEX_HOME}/bin/adt
```

Option 1: On the command line

On the command line navigate to **DiaDrawScreenCastANE/AIRLibrary/build scripts/** and run

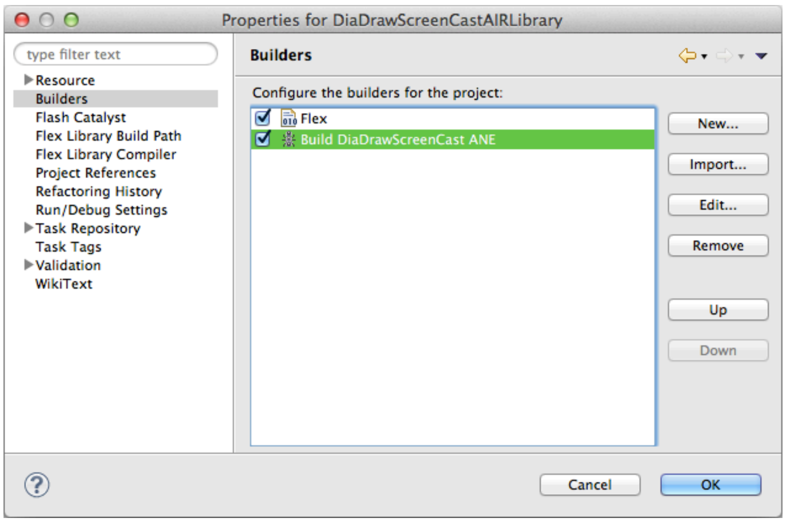
```
ant
```

Option 2: In Flash Biulder

Import **DiaDrawScreenCastANE/AIRLibrary** in Flash Builder and select **Project** > **Properties**.

Select **Builders**, then click **New…** to create a new **Ant Builder**.

Inside the **Edit launch configuration properties** dialog click Browse Workspace to navigate to **DiaDrawScreenCastANE/AIRLibrary/build scripts/** and select **build.xml**, then **OK** the dialog. Back in Flash Builder select **Project** > **Build Project**. This should rebuild everything from scratch and package an ANE file in **DiaDrawScreenCastANE/ane**.


Properties for DiaDrawScreenCastAIRLibrary

Builders

Configure the builders for the project:

- ✓ Flex
- ✓ Build DiaDrawScreenCast ANE

Questions?

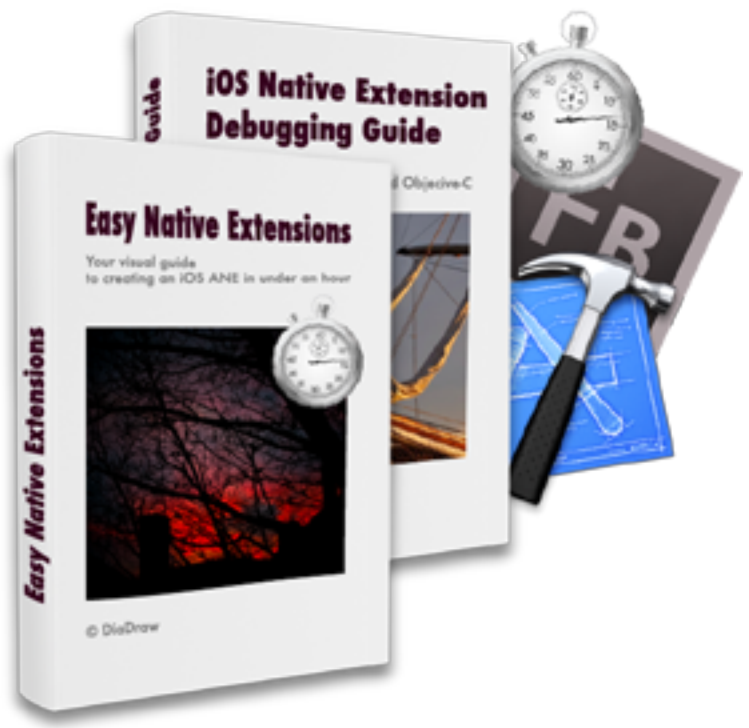
Drop us a line at support@diadraw.com if you have any questions about using **DiaDrawSCreenCast.ane** or this manual.

What else is out there?

Find more ANE-related information in our tutorials and articles.

Have a look at the other ANEs on our website.

Have you checked out our Easy Native Extensions eBook yet?



Thank you

… and happy coding from The DiaDraw Team!

Developed in collaboration with: **Jonathan Kaye, PhD, President, CommandSim**

http://www.commandsim.com

http://www.simsushare.com