

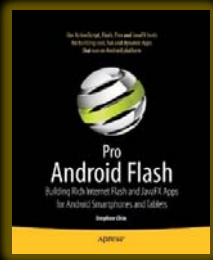
An Introduction to Flash and AIR Development on Android

Android Flash Development

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Twitter: @steveonjava
<http://steveonjava.com/>

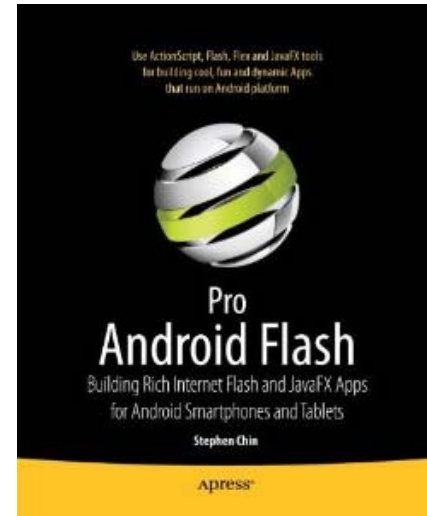
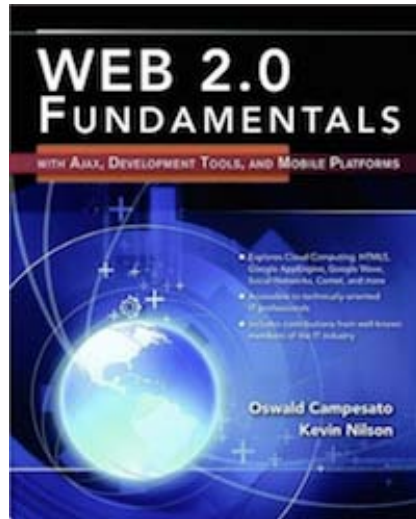
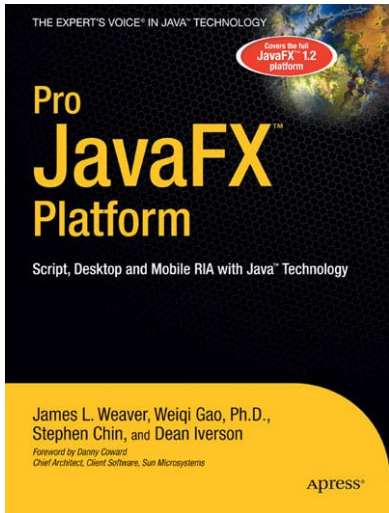
Oswald Campesato
Twitter: @ocampesato
<http://book2-web.com/>

About the Presenters



STEPHEN
CHIN

OSWALD
CAMPESTATO

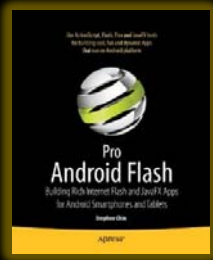


DISCLAIMER

Bleeding Edge Development



Flash and AIR on Android



Adobe Flash

- Available on Android Phones Today
- Works in the Browser
- Limited Access to Device APIs

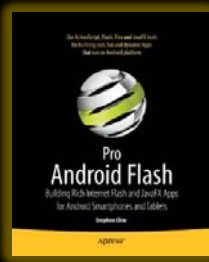


Adobe AIR

- In Pre-release Today
- Deploys as an Android Market Application
- Gives Full Access to Device APIs

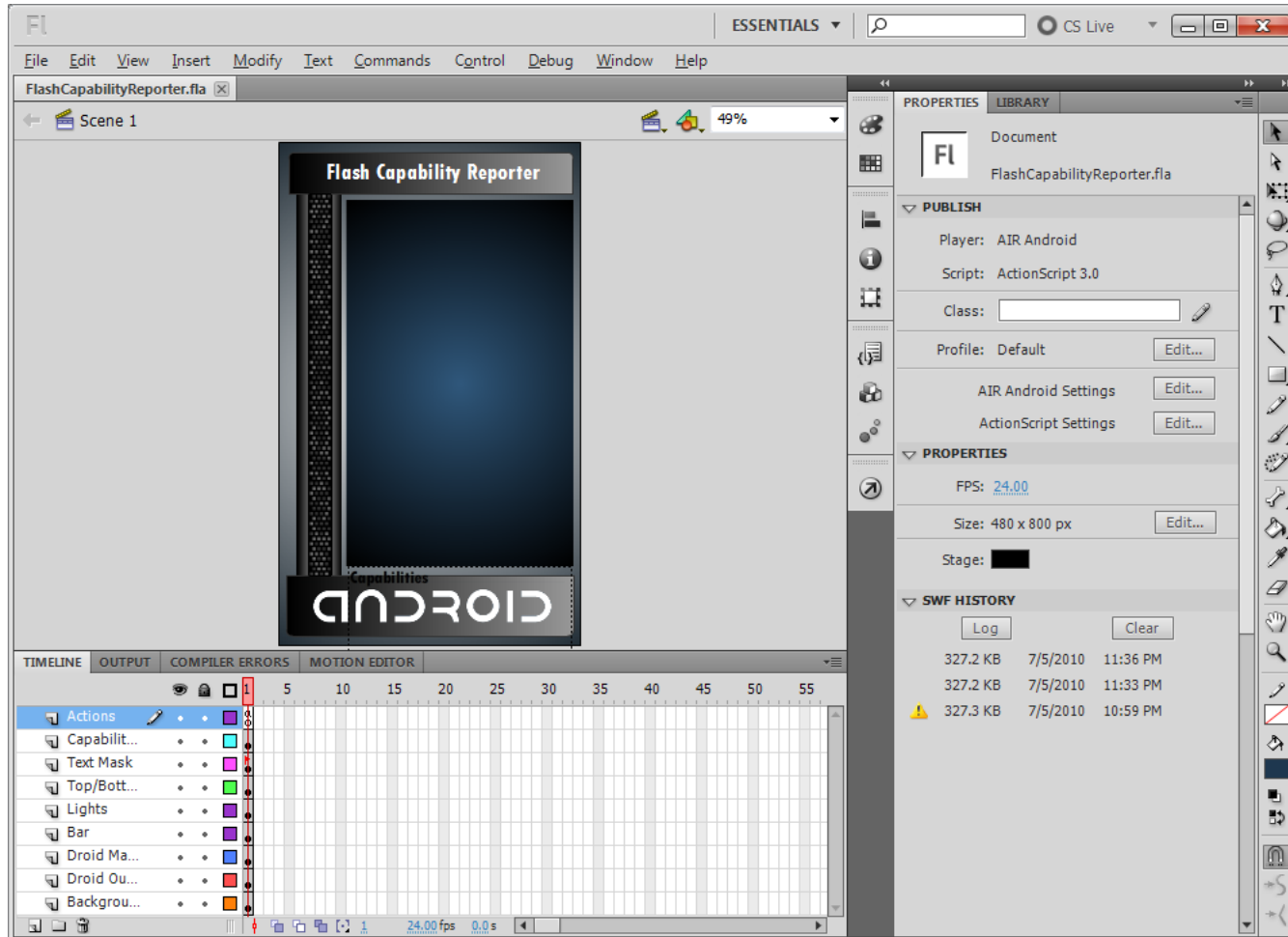
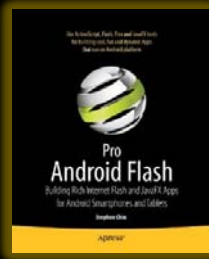
Update: Now Available in the Android Market!

Flash Tooling

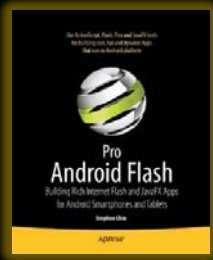


Tool Name	Description	Supports	Android Development
Adobe Flash CS5	Visual design tool for building Flash applications with some Actionscript.	Actionscript	Via Plug-in
Adobe Flash Builder 4	Professional Flex and Actionscript development environment.	Flex, Actionscript	Command Line Plug-in Available Later
Device Central	Device library and runtime emulation environment.	N/A	Downloaded Profiles
Flex 4 SDK	Stand-alone development toolkit.	Flex, Actionscript	Command Line
Adobe Flash Catalyst	Rapid Development Platform for building Flex user interfaces.	Flex, Actionscript	Not supported directly

Flash Professional CS5



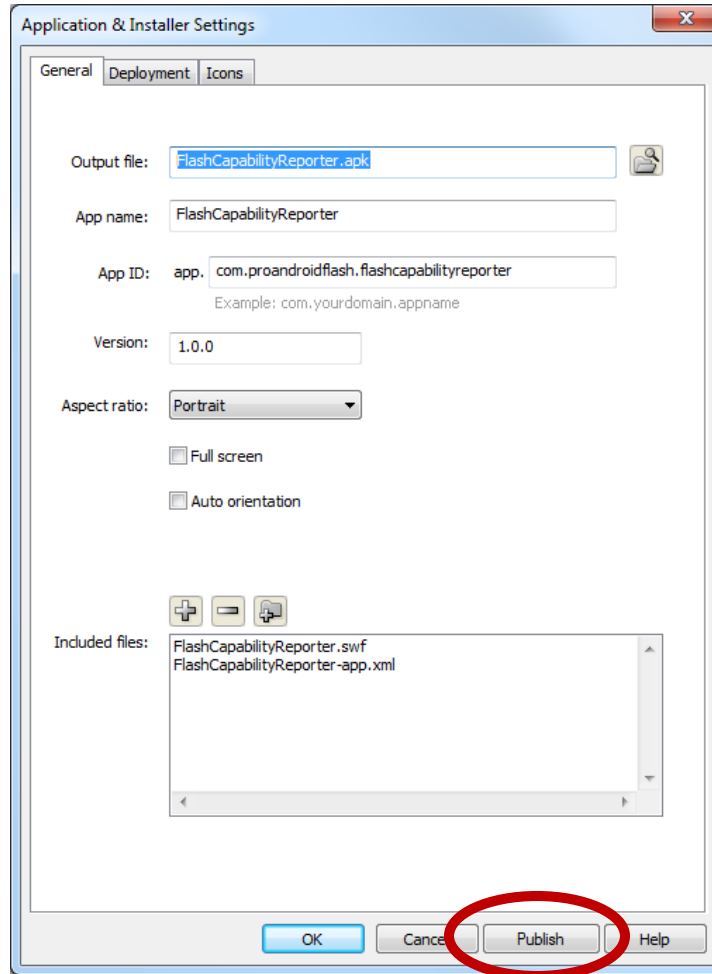
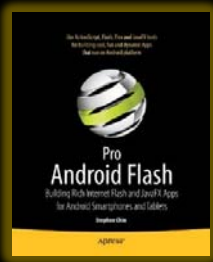
Flash Capability Reporter



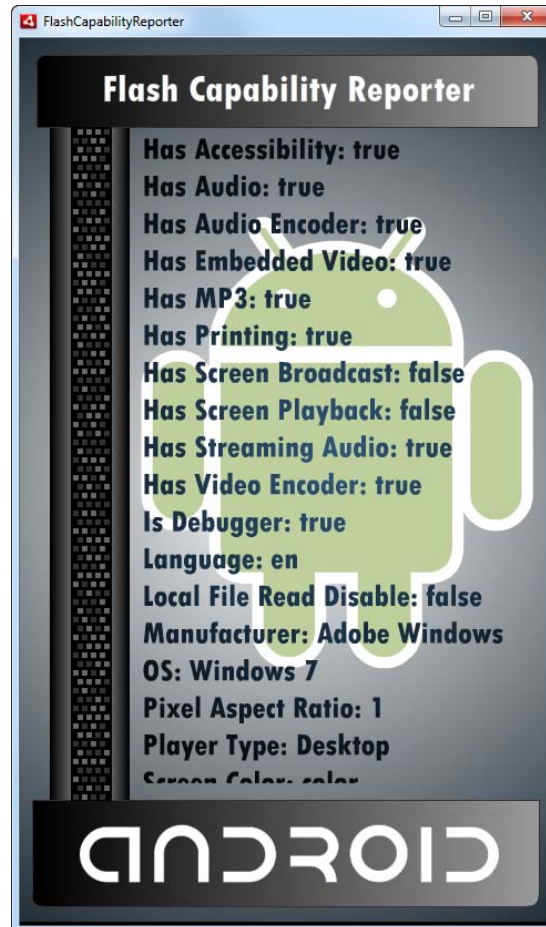
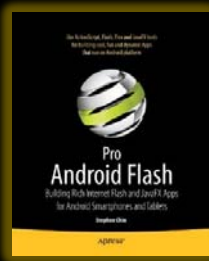
```
import flash.system.Capabilities;
import flash.ui.Multitouch;

capabilityScroller.capabilities.text =
    "Manufacturer: " + Capabilities.manufacturer + "\n" +
    "OS: " + Capabilities.os + "\n" +
    "Pixel Aspect Ratio: " + Capabilities.pixelAspectRatio + "\n" +
    "Player Type: " + Capabilities.playerType + "\n" +
    "Screen Color: " + Capabilities.screenColor + "\n" +
    "Screen DPI: " + Capabilities.screenDPI + "\n" +
    "Screen Resolution: " + Capabilities.screenResolutionX + "x" +
    Capabilities.screenResolutionY + "\n" +
    "Touch Screen Type: " + Capabilities.touchscreenType + "\n" +
    "Version: " + Capabilities.version + "\n" +
    "Supports Gesture Events: " + Multitouch.supportsGestureEvents + "\n" +
    "Supports Touch Events: " + Multitouch.supportsTouchEvents + "\n" +
    "Input Mode: " + Multitouch.inputMode + "\n" +
    "Max Touch Points: " + Multitouch.maxTouchPoints + "\n" +
    "Supported Gestures: " + Multitouch.supportedGestures;
```

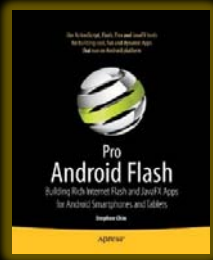
Flash Professional CS5



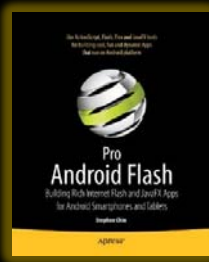
Flash Capability Reporter



Android Devices

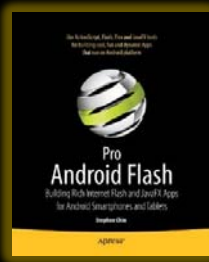


Device Screen Characteristics

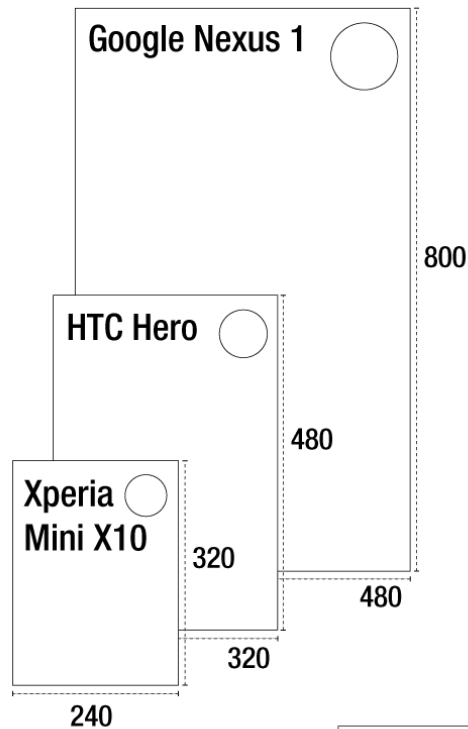


Device Name	Manufacturer	Resolution	Size	Density	Type
T-Mobile G1	HTC	320x480	3.2"	180ppi	HVGA
HTC Hero	HTC	320x480	3.2"	180ppi	HVGA
Motorola Droid	Motorola	480x854	3.7"	265ppi	FWVGA
Google Nexus One	HTC	480x800	3.7"	252ppi	WVGA
Xperia X10 Mini	Sony Ericsson	240x320	2.55"	157ppi	QVGA
Xperia X10	Sony Ericsson	480x854	4"	245ppi	WVGA
HTC Evo 4G	HTC	480x800	4.3"	217ppi	WVGA
Droid X	Motorola	480x854	4.3"	?	FWVGA

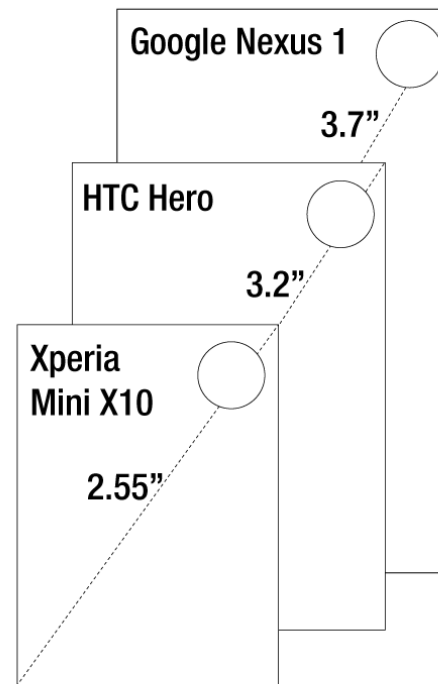
Screen Resolution vs. Density



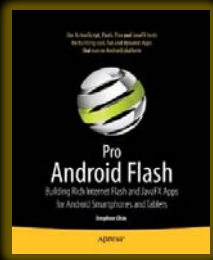
Screen Resolution



Physical Device Size



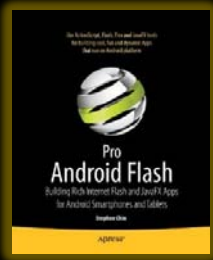
Flash/AIR Mobile APIs



- Screen Orientation *
- Multitouch *
- Gestures
- Accelerometer
- Camera
- GPS

* APIs we will show examples of today

Screen Orientation



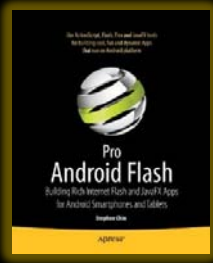
- Stage Event Listener

- `stage.addEventListener(StageOrientationEvent.ORIENTATION_CHANGE, <function callback>);`

- StageOrientation Values

- DEFAULT
 - ROTATED_LEFT
 - ROTATED_RIGHT
 - UPSIDE_DOWN
 - UNKNOWN

Screen Orientation Example



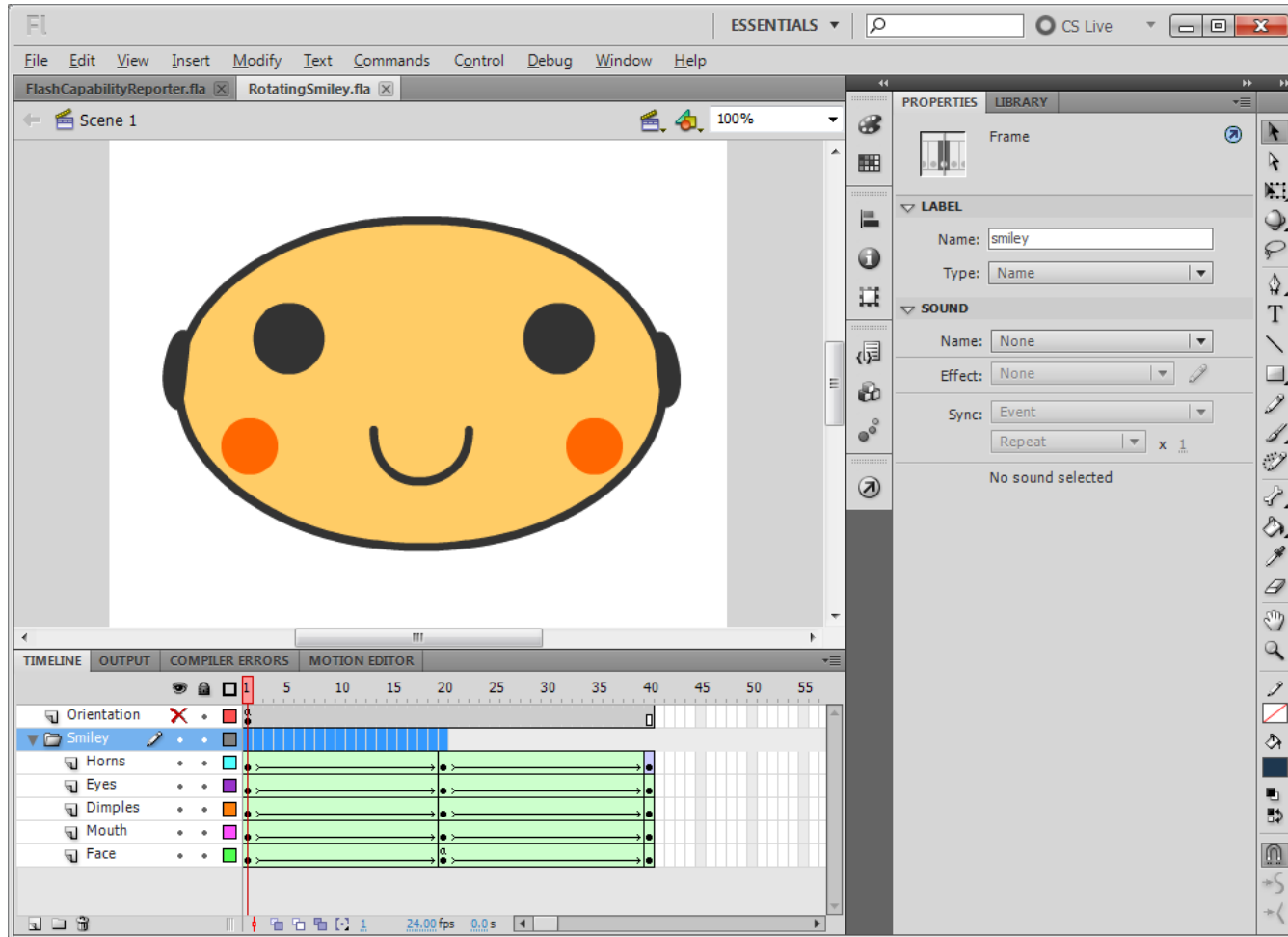
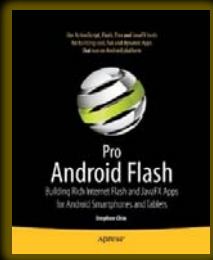
```
import flash.display.StageOrientation;
import flash.events.StageOrientationEvent;

stop();

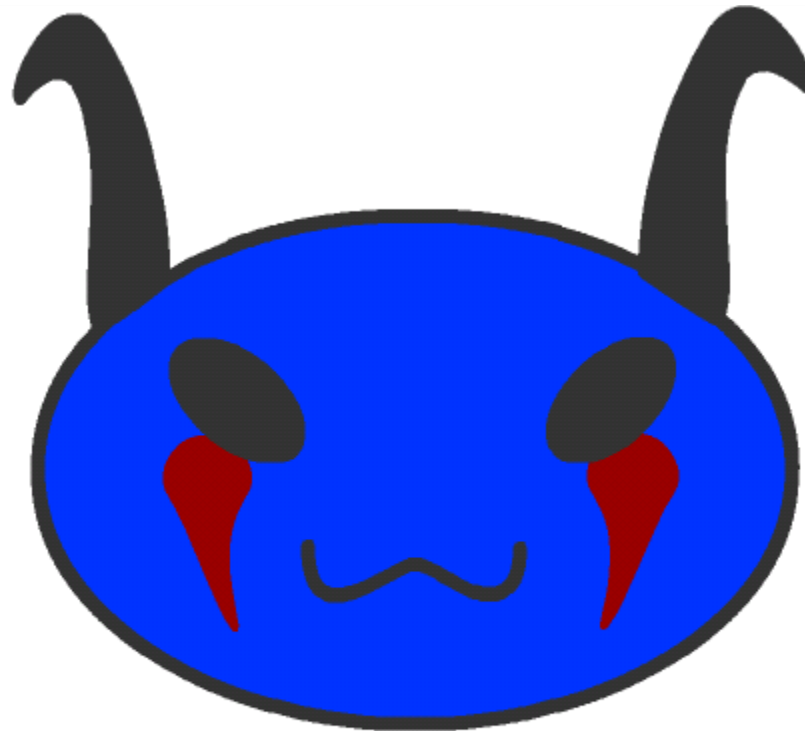
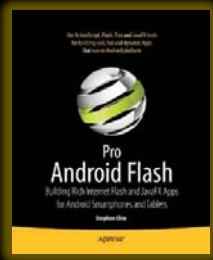
stage.addEventListener(
    StageOrientationEvent.ORIENTATION_CHANGE, onChanged);

function onChanged(event:StageOrientationEvent):void {
    play();
}
```

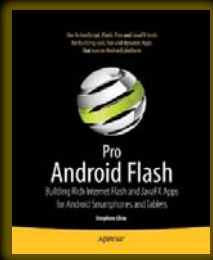
Portrait/Landscape Switching



Portrait/Landscape Switching



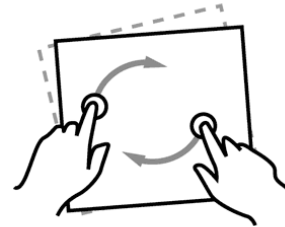
Multitouch



GESTURES



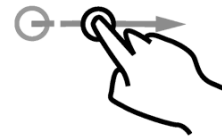
Two Finger Tap



Rotate



Press and Tap



Swipe

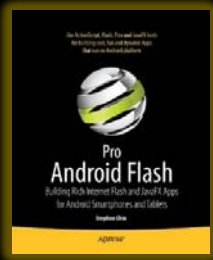


Pan



Zoom

Android Scrapbook Example



```
package com.proandroidflash {
    import flash.events.TransformGestureEvent;
    import flash.ui.Multitouch;
    import flash.ui.MultitouchInputMode;

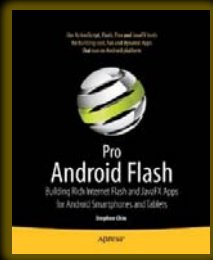
    import mx.controls.Image;

    public class MultiTouchImage extends Image {
        public function MultiTouchImage() {
            addEventListener(TransformGestureEvent.GESTURE_ROTATE, rotateListener);
            addEventListener(TransformGestureEvent.GESTURE_ZOOM, zoomListener);
            Multitouch.inputMode = MultitouchInputMode.GESTURE;
        }

        public function rotateListener(e:TransformGestureEvent):void {
            rotation += e.rotation;
        }

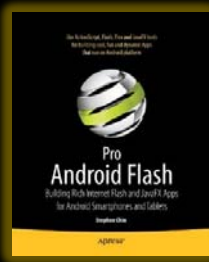
        public function zoomListener(e:TransformGestureEvent):void {
            scaleX *= e.scaleX;
            scaleY *= e.scaleY;
        }
    }
}
```

Android Scrapbook Example

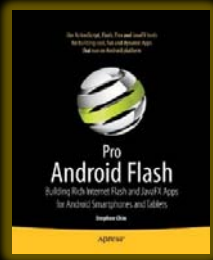


```
<?xml version="1.0" encoding="utf-8"?>
<s:Application xmlns:fx="http://ns.adobe.com/mxml/2009"
               xmlns:s="library://ns.adobe.com/flex/spark"
               xmlns:mx="library://ns.adobe.com/flex/mx"
               xmlns:proandroidflash="com.proandroidflash.*"
               backgroundColor="#333333">
  <s:layout>
    <s:VerticalLayout horizontalAlign="center" paddingTop="10" paddingLeft="10" paddingRight="10"
                      paddingBottom="10"/>
  </s:layout>
  <fx:Declarations>
    <fx:Array id="images">
      <fx:Object>
        [ @Embed(source='images/cassandra1.jpg') ]
      </fx:Object>
    </fx:Array>
  </fx:Declarations>
  <s:Label text="Android Scrapbook" fontSize="32" color="white"/>
  <s:Label text="Drag, Rotate, and Zoom with your fingers." fontSize="14" color="#aaaaaa"/>
  <s:BorderContainer backgroundColor="#cccccc" borderColor="#555555" rotation="5" width="110%" height="110%">
    <s:filters>
      <s:DropShadowFilter alpha="0.5"/>
    </s:filters>
    <proandroidflash:MultiTouchImage source="@Embed(source='images/cassandra1.jpg')" y="20" x="10"
    width="350" rotation="-3"/>
    <proandroidflash:MultiTouchImage source="@Embed(source='images/cassandra2.jpg')" y="200" x="40"
    width="350" rotation="13"/>
    <proandroidflash:MultiTouchImage source="@Embed(source='images/cassandra3.jpg')" y="460" x="5"
    width="350" rotation="-8"/>
  </s:BorderContainer>
</s:Application>
```

Android Scrapbook Example

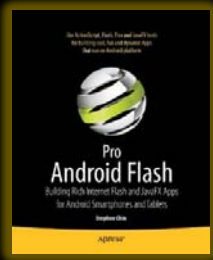


AIR APIs not on Mobile (1 of 2)



API Name	Property to Check
Accessibility	Capabilities.hasAccessibility
DatagramSocket	DatagramSocket.isSupported
DNSResolver	DNSResolver.isSupported
DockIcon	NativeApplication.supportsDockIcon
DRMManager	DRMManager.isSupported
EncryptedLocalStore	EncryptedLocalStore.isSupported
HTMLLoader	HTMLLoader.isSupported
LocalConnection	LocalConnection.isSupported
NativeApplication.exit()	--
NativeApplication.menu	NativeApplication.supportsMenu
NativeApplication.isSetAsDefaultApplication()	NativeApplication.supportsDefaultApplication
NativeApplication.startAtLogin	NativeApplication.supportsStartAtLogin

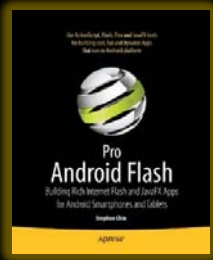
AIR APIs not on Mobile (2 of 2)



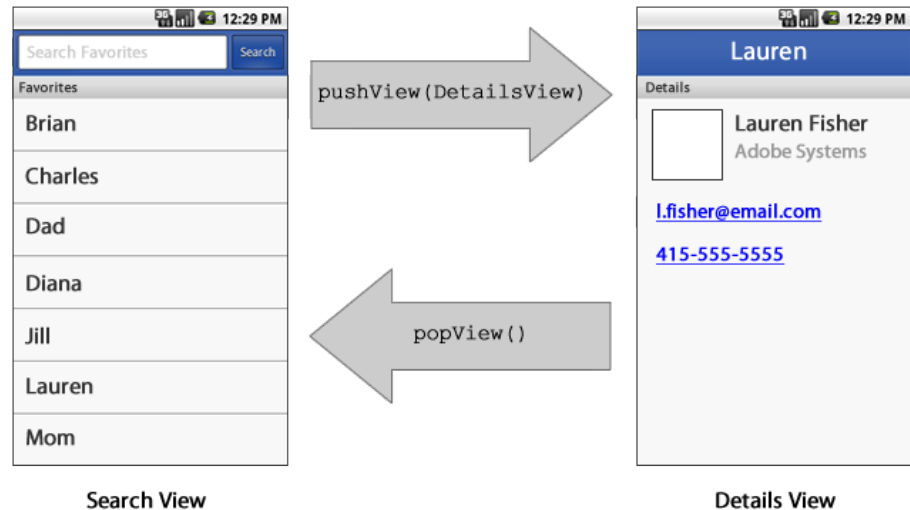
API Name	Property to Check
NativeMenu	NativeMenu.isSupported
NativeProcess	NativeProcess.isSupported
NativeWindow	NativeWindow.isSupported
NativeWindow.notifyUser()	NativeWindow.supportsNotification
NetworkInfo	NetworkInfo.isSupported
PDF support	HTMLLoader.pdfCapability
PrintJob	PrintJob.isSupported
SecureSocket	SecureSocket.isSupported
ServerSocket	ServerSocket.isSupported
Shader	--
ShaderFilter	--
StorageVolumeInfo	StorageVolumeInfo.isSupported
XMLSignatureValidator	XMLSignatureValidator.isSupported

Flex Mobile - Hero

Coming 2011

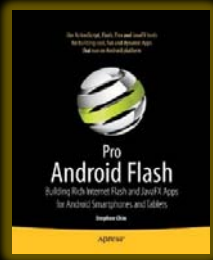


- MobileApplication
- Views
- ViewNavigator
- Splash Screen
- Components:
 - ActionBar
 - Text Components
 - List, Scroller, and Touch Gestures



For more info see: <http://opensource.adobe.com/wiki/display/flexsdk/Hero>

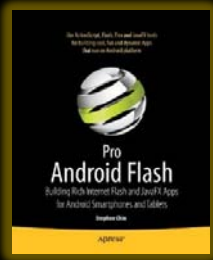
Future Device Support



- Android Tablets
- iPhone/iPad
- Television

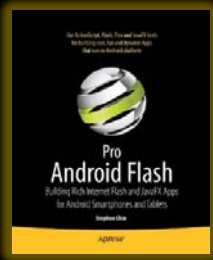


SDK Links



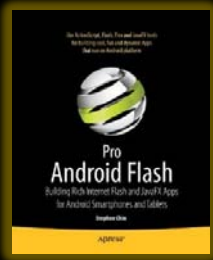
- Android SDK (2.2 or later)
 - <http://developer.android.com/sdk/index.html>
- AIR Prerelease
 - <http://labs.adobe.com/technologies/air2/android/>
- Flex Mobile (Hero)
 - <http://opensource.adobe.com/wiki/display/flexsdk/Hero>

Blogs to Read



- James Ward
 - <http://www.jamesward.com/>
- Christian Cantrell
 - <http://blogs.adobe.com/cantrell/>
- Christophe Coenraets
 - <http://coenraets.org/blog/>
- Serge Jespers
 - <http://www.webkitchen.be/>
- Lee Brimelow (The Flash Blog)
 - <http://blog.theflashblog.com/>
- Mark Doherty (FlashMobileBlog)
 - <http://www.flashmobileblog.com/>

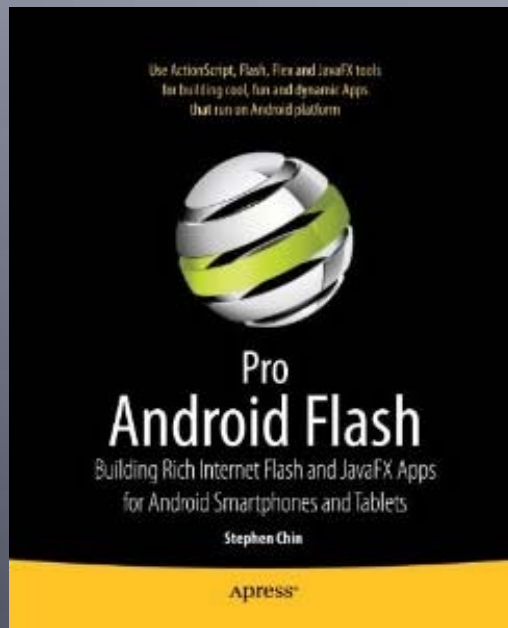
Local Meetups



- San Flashcisco
- BAADUG
- SilvaFUG
- SilvaFUG presents Flash On...
 - Flash Gaming on Android
 - Stephen Chin and James Young
 - November 9th (SF) and 11th (SJ)

Pro Android Flash

Stephen Chin, Oswald Campesato, and Dean Iverson



Coming in April 2011

Will Include:

- UI Controls
- Media Support
- Mobile Flex APIs
- Android Market Deployment
- Extensive Examples