

# MAX 2006 Getting Started with Adobe Flex 2

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## Introduction to Flex

- What is Flex?
  - Flex can refer to 4 different things:
    - Flex Builder
    - Flex Run Time
    - Flex Data Services
    - Flex Charting

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## Agenda

- Introduction
  - Who Am I
  - Intro to Flex
- Flex and Web 2.0
- Who is using Flex?
- Using Flex Builder
- Building Flex Apps
  - MXML
  - ActionScript 3.0 (AS3)
  - Connecting to Back End

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## Intro to Flex

- Flex and Web 2.0
  - Myriad of options for building next generation internet applications
    - AJAX
    - XAML
    - Laszlo
    - Flex
  - Flex is the most complete solution available
    - Freely available SDK
    - Robust Eclipse based IDE
    - Rich set of Charting Components
    - Comprehensive Data Services

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## Who Am I

- Jeff Tapper (jeff@tapper.net)
- Founding Partner – Tapper, Nimer & Associates, Inc.
- Building Internet Applications since 1995
- Authored 7 books on internet technologies
- Adobe Certified Instructor for all Flex, Flash, and ColdFusion courses

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## Intro to Flex

- Flex and Web 2.0
  - The Flex product line provides developers with the tools to make the productive now.
    - Flex Builder – Eases development process. IDE based on Eclipse. Fully extensible, plug in based.
    - Flex Run Time – Standards based languages, easy to learn, extremely powerful.
    - Flex Charting – Robust framework for visualizing data
    - Flex Data Services – Removes complexity in building collaborative multi user systems

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## Intro to Flex

- Who is using Flex today?
  - Harley Davidson
  - I-Photo
  - Morgan Stanley
  - Doctations
  - New Era Caps
  - Under Armor
  - Fidelity Investments
  - And many many more...

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## Using MXML - Controls


- There are a number of different controls provided, such as:
  - Text Controls: Label, Text Input, Text Area
  - List Controls: Combo Box, List Box, Tree, Data Grid
  - Common UI Elements: Check Box, Radio Button, Image, Button
  - Menu Controls: Menu, Menu Bar, Popup Menu Button
  - And many more

```
<?xml version="1.0" encoding="utf-8"?>
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml"
  layout="absolute">
  <mx:Label text="Hello World"
    fontSize="30"
    horizontalCenter="0"
    verticalCenter="0"/>
</mx:Application>
```

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## Intro to Flex Builder

- Flex Builder is a powerful IDE based on Eclipse.
- Includes design and code view
- Visual layouts can be done via drag and drop in design view
- Fully interactive debugger built in
- Available as stand-alone product or an Eclipse plug in.
- Retails for \$499
- Flex Builder not required for building Flex Applications. Flex SDK allows for free development.




HelloWorld.mxml design view demo

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## Using MXML - Containers

- Flex provides a number of layout containers for controlling how content appears.
  - Canvas
  - Box/VBox/HBox
  - Form/FormItem
  - Panel/TitleWindow
  - ControlBar/ApplicationControlBar
  - Etc.



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## Using Flex - MXML

- Flex provides a series of MXML tags to allow for rapid development of Applications
- Several categories of MXML Tags:
  - Controls
  - Containers
  - Navigation
  - Data Services
    - RPC
    - Messaging
  - Charts
  - Effects
  - Etc.

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## Using MXML - Containers Demo

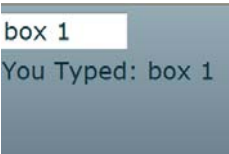
```
<?xml version="1.0" encoding="utf-8"?>
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml"
  layout="absolute" styleName="bigText">
  <mx:Style source="max06.css"/>
  <mx:VBox x="0" y="10">
    <mx:TextInput id="input1"/>
    <mx:Label text="You Typed: {input1.text}"/>
  </mx:VBox>
  <mx:HBox x="400" y="10">
    <mx:TextInput id="input2"/>
    <mx:Label text="You Typed: {input2.text}"/>
  </mx:HBox>
</mx:Application>
```

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### Using MXML – Data Binding

- Data binding allows for sharing data from one part of application to another
- Automatically updates when original data changes

```
<mx:TextInput id="input"/>
<mx:Label text="You Typed: {input.text}"/>
```



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### Intro to ActionScript 3.0

- ActionScript 3.0 (AS3), is the scripting language of Flex 2.0
- ECMA Compliant language
- Similar to:
  - Java
  - C#
  - JavaScript
- Strongly Typed language
- Class Based

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### Using MXML - Services

- Flex provides a number of Data Services for connecting to a server for Data
- HTTPService – allows for making an HTTP request to a server, often used to load xml data.
- WebService – allows for connecting to a SOAP based web service. Most common approach for connecting to PHP and .Net servers
- RemoteObject – allows for connecting directly to a ColdFusion Component or Java Object. Most efficient communication
- Messaging – allows for keeping data in sync for multiple simultaneous users

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### Using ActionScript 3.0

- ActionScript can be applied in one of three places:
- Inline in a tag
 

```
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml"
  layout="absolute"
  creationComplete="prodSvc.getAllProds()" />
```
- In an external Script file
 

```
<mx:Script source="myASFile.as" />
```
- In a class file
 

```
package valueObjects{
  public class Product{
    public var prodID: Number;
    public var catID: Number;
    public var prodName: String;
  }
}
```

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### Using MXML – Services Demo

```
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml"
  layout="absolute"
  creationComplete="prodSvc.getAllProds()" />
<mx:RemoteObject id="prodSvc"
  destination="ColdFusion"
  source="FlexGrocer.cfc.ProductManager"
  showBusyCursor="true" />
<mx:DataGrid dataProvider="{prodSvc.getAllProds().lastResult}" />
</mx:Application>
```

category	cost	listPrice	product	unit
Vegetables	1.25	1.99	Yellow Peppers	Pound
Fruit	2.5	3.55	Strawberries	Pound
Vegetables	1.69	2.15	Vine Ripened Tomatoes	Pound
Fruit	1.34	2.15	Grapes	Bunch
Fruit	0.95	1.98	Bananas	Bunch
Meat	1.5	2.99	Whole Chicken	Pound

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### Using ActionScript 3.0

- Flex ships with a rich class library, including:
  - Formatters
  - Validators
  - Effects
  - Events
  - Etc.

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## Building Flex Apps - Events

- Building GUI applications requires event driven architectures
- Every mxml component has a rich set of events it broadcasts

Adobe® Flex™ 2 Language Reference | All Packages | All Classes | Language Elements | Index | Appendices | Conventions

**Class CheckBox** | Properties | Methods | Events | Styles | Effects | Constants | Examples

### Events

Hide Inherited Events

Event	Summary	Defined by
<b>activate</b>	Dispatched when Flash Player gains operating system focus and becomes active.	DisplayObject
<b>add</b>	Dispatched when the component is added to a container as a content child by using the <code>addChild()</code> or <code>addChildAt()</code> method.	UIComponent
<b>added</b>	Dispatched when a display object is added to the display list.	DisplayObject
<b>buttonDown</b>	Dispatched when the user presses the button control.	Button
<b>change</b>	Dispatched when the <code>selected</code> property changes for a toggle button control.	Button
<b>click</b>	Dispatched when a user presses and releases the main button of the user's pointing device over the same InteractiveObject.	InteractiveObject

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## Summary

- Flex provides a myriad of tools to allow rapid Web 2.0 application development
- Flex Builder provides a rich IDE for easing development of applications
- Flex is built with a combination of MXML and ActionScript 3.0
- MXML contains a series of tags to represent controls, containers, data services and more
- Building GUI applications requires an understanding of events and event handling

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## Building Flex Apps – Handling Events

- Components communicate with each other by broadcasting events.

```
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml"
  layout="absolute"
  creationComplete="prodSvc.getAIProds()" >
```

- `creationComplete` is an event broadcast by `Application` when all children are created
- All flex components have events which can be handled like this.

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## Where to learn more

- There are many other flex sessions here at MAX, including:
  - Building Rich Internet Applications with Flex Builder
  - Flex Data Services Overview
  - Flex Under the Hood: A Tour Through the Flex Architecture (may be advanced)
  - Getting Started with Apollo
- Online Resources
  - <http://www.adobe.com/devnet/flex>
  - <http://www.flex.org/>
  - <http://weblogs.macromedia.com/mxna/>
  - <http://jeff.mxdj.com> - my blog
- Books:
  - Flex 2 – Training From the Source

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