ADOBE FLEX

mobile application framework

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About the Tutorial

Flex is a powerful, open source application framework that allows you to build mobile applications for iOS, Android, and BlackBerry Tablet OS devices, as well as traditional applications for browsers and desktops using the same programming model, tool, and codebase.

You can build Flex applications using Adobe Flash Builder which is an enterprise-class Eclipse based IDE. This tutorial will provide you an in-depth understanding on Flex concepts needed to get a web and mobile application up and running.

Audience

This tutorial is meant for software professionals who would like to learn Flex Programming in simple and easy steps. After completing this tutorial successfully, you should be at an intermediate level of expertise from where you can take yourself to higher level of proficiency.

Prerequisites

Before proceeding with this tutorial, it is advisable to have a basic understanding of other web technologies like HTML, CSS, or AJAX for better understanding.

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1. Flex – Overview

What is Flex?

Flex is a powerful, open source application framework that allows you to build traditional applications for browser, mobile and desktop using the same programming model, tool, and codebase.

Flex provides FLEX SDK consisting of the Flex class library (ActionScript classes), the Flex compilers, the debugger, the MXML and ActionScript programming languages, and other utilities to build expressive and interactive rich internet applications (RIA)

Flex takes care of the user interface (UI) or the client-side functionality of a web application. Server-side functionality is dependent on server-side components written in a traditional scripting language (Java/ PHP etc.)

A Flex based application actually delivered as a SWF file and it closely resembles the HTML / JavaScript portion of a traditional web application.

Flex application is deployed as SWF file(s) plus an HTML wrapper, the CSS file(s) and any server-side script files (i.e. Java, .CFM, .PHP, etc.) to the server. Like traditional web applications.

These resources are delivered from a server to the client's browser using the customary HTTP request / response fashion and Flash Player which runs the application in a browser.

Advantages of Flex

- Flex applications are usually Flash Player based which can access device capabilities like GPS, camera, local database, graphics accelerometer.
- Flex applications can run on Android, BlackBerry Tablet OS, and iOS devices.
- Flex applications can run on Browsers as well as on Desktop.
- Flex applications are platform independent. UI can be native to platform or can be made same on each platform.
- Flex applications can interact with server with all major server side technologies like Java, Spring, Hibernate, PHP, Ruby, .NET, Adobe ColdFusion, and SAP using industry standards such as REST, SOAP, JSON, JMS, and AMF.

- Flex Applications assures rich user experience through intuitive interaction with the application and presenting information in a visually richer interface.

- Flex application is a single page application where states can transition from one state to other state without having to fetch a new page from the server or to refresh the browser.

- Flex application reduces the load on the server to great extent because it is only required to return the application once, rather than a new page every time when the user changes views.

Disadvantages of Flex

- Flex applications are single threaded applications but Flex provides an asynchronous programming model to mitigate this concern.

- Flex is ActionScript and XML based. Learning of these two is a must to work in Flex.

2. Flex – Environment Setup

This tutorial will guide you on how to prepare a development environment to start your work with Adobe Flex Framework. This tutorial will also teach you how to setup JDK and Adobe Flash Builder on your machine before you setup Flex Framework.

System Requirement

FLEX requires JDK 1.4 or higher, so the very first requirement is to have JDK installed in your machine.

JDK	1.4 Or above.
Memory	No minimum requirement.
Disk Space	No minimum requirement.
Operating System	No minimum requirement.

Follow the given steps to setup your environment to start with Flex application development.

Step 1 – Verify Java installation on your machine

Now open the console and execute the following **java** command.

OS	Task	Command
Windows	Open Command Console	c:\> java -version
Linux	Open Command Terminal	$ java -version
Mac	Open Terminal	machine:~ joseph$ java -version

Let's verify the output for all the operating systems:

OS	Generated Output
Windows	java version "1.6.0_21" Java(TM) SE Runtime Environment (build 1.6.0_21-b07) Java HotSpot(TM) Client VM (build 17.0-b17, mixed mode, sharing)
Linux	java version "1.6.0_21" Java(TM) SE Runtime Environment (build 1.6.0_21-b07) Java HotSpot(TM) Client VM (build 17.0-b17, mixed mode, sharing)
Mac	java version "1.6.0_21" Java(TM) SE Runtime Environment (build 1.6.0_21-b07) Java HotSpot(TM)64-Bit Server VM (build 17.0-b17, mixed mode, sharing)

Step 2 - Setup Java Development Kit (JDK)

If you do not have Java installed, then you can install the Java Software Development Kit (SDK) from Oracle's Java site: Java SE Downloads. You will find instructions for installing JDK in downloaded files, then follow the given instructions to install and configure the setup. Finally set PATH and JAVA_HOME environment variables to refer to the directory that contains java and javac, typically java_install_dir/bin and java_install_dir respectively.

Set the **JAVA_HOME** environment variable to point to the base directory location where Java is installed on your machine. For example:

OS	Output
Windows	Set the environment variable JAVA_HOME to C:\Program Files\Java\jdk1.6.0_21
Linux	export JAVA_HOME=/usr/local/java-current
Mac	export JAVA_HOME=/Library/Java/Home

Append the Java compiler location to the System Path.

OS	Output
Windows	Append the string ;%JAVA_HOME%\bin to the end of the system variable, Path.
Linux	export PATH=$PATH:$JAVA_HOME/bin/
Mac	not required

Step 3 - Setup Adobe Flash Builder 4.5

All the examples in this tutorial has been written using Adobe Flash Builder 4.5 Profession IDE Trial Version. Hence, suggest you to have latest version of Adobe Flash Builder installed on your machine. Also, check compatibility of operating system.

To install Adobe Flash Builder IDE, download the latest Adobe Flash Builder binaries from http://www.adobe.com/in/products/flash-builder.html. Once you downloaded the installation, unpack the binary distribution into a convenient location. For example, in C:\flash-builder on windows, or /usr/local/flash-builder on Linux/Unix and finally set PATH variable appropriately.

Flash Builder will start, when you execute the following commands on windows machine, or when you can simply double click on FlashBuilder.exe

```
%C:\flash-builder\FlashBuilder.exe
```

Flash Builder can be started by executing the following commands on Unix (Solaris, Linux, etc.) machine:

```
$/usr/local/flash-builder/FlashBuilder
```

Adobe Flash Builder Trial Version can be used for 60 days. Just accept the terms and conditions, and skip the initial registration steps to continue with the IDE. For our understanding, we're using the trial version for teaching purpose.

After a successful startup, if everything is fine then it should display the following result:

Adobe Flash Builder comes pre-configured with FLEX SDKs. We're using FLEX SDK 4.5 in our examples which come bundled with Adobe Flash Builder 4.5.

End of ebook preview

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