Creating Flash Lite Content For BREW

In this unit, you will learn how to create content for BREW enabled phones as well as learn how to use the Qualcomm tools for BREW development.

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Objectives

After completing this unit, you should be able to:

▶ Understand which Flash Lite features are supported on BREW phones

▶ Set up the environment for building BREW applications

▶ Publishing and testing Flash Lite applications for BREW

▶ Uploading BREW applications to a handset

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Using BREW and Flash Lite

▶BREW (Binary Runtime Environment for Wireless) is a mobile device platform made by QUALCOMM Incorporated.

- Content developed for BREW will run across all devices which support BREW.

▶Adobe Flash Lite 2.1 runs within the BREW platform, so Flash Lite 2.1 content can run on all devices which support BREW, once Flash Lite 2.1 for BREW is installed.

▶BREW content is distributed to BREW devices over-the-air via the BREW Delivery System (BDS), with fully automated payment.

▶ Wireless carriers which support BREW, choose which content to make available from BDS through their own Application Download Server (ADS).

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Understanding the BREW development process

Developing and releasing any BREW application, Flash Lite 2.1 or otherwise, is a four-phase process

1. Develop and Test on the BREW SDK Simulator

2. Deploy and Test on a BREW enabled device

3. Digitally sign and submit application for TRUE BREW (NSTL) testing

4. Complete Application Distribution agreement with Qualcomm/BREW

    a. deploy to BREW Delivery System (BDS)

    b. selection by Carrier's for their Application Distribution System (ADS)

    c. user purchase from Carrier, with negotiated fee back to Developer

This course focuses on the first two phases. To proceed beyond the first phase, you must be an Authenticated BREW Developer. Information is available here:

```
http://brew.qualcomm.com/brew/en/developer/
  resources/gs/get_auth.html
```

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Installing BREW development software

Detailed information about BREW development is available from Qualcomm.

```
http://brew.qualcomm.com/brew/en/developer/
  resources/dev_resources.html
```

To configure a Windows system for BREW development:

1. Join the Adobe Mobile Developer Program

```
http://www.adobe.com/devnet/devices/
  dev_program/
```

2. Register at the BREW Developer website (free)

```
https://brewx.qualcomm.com/brew/sdk/
```

3. Download/install the BREW SDK (Internet Explorer recommended)

```
https://brewx.qualcomm.com/brew/sdk/
```

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Installing BREW development software

4. Download/install the Flash Lite 2.x Update for Flash Professional 8

```
http://www.adobe.com/support/flash/
  downloads.html#flash8pro
```

5. Download/install the Flash Lite 2.1 Publisher for BREW

```
http://www.adobe.com/devnet/devices/
  verizon.html
```

6. Develop new content, or re-publish existing content for BREW

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Walkthrough 1: Setting up the BREW environment

In this walkthrough, you will perform the following tasks:
- ▶Register as a BREW Developer
- ▶Install the BREW SDK and tools
- ▶Install Flash Lite 2.1 for BREW

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Authoring Flash Lite Applications for BREW

▶The BREW file architecture is different than the normal Flash Lite file architecture, which relies primarily on FLA, SWF, and AS files.

▶The Flash Lite for BREW Publisher automates the process of generating the files and directory structure required by the BREW runtime environment.

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Understanding BREW file types

The files needed to deploy Flash Lite content on a BREW device are:

▶ MOD (`.mod`) file: BREW Application file used in target BREW device

▶ DLL (`.dll`) file: BREW Application file used in desktop BREW simulator

▶ MIF (`.mif`) file: Configuration information for the application

▶ SIG (`.sig`) file: Device and developer-specific signature file provided for a fee to Qualcomm authenticated BREW developers

▶ BAR (`.bar`) file: Copy-protected, non-transferable asset files

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Understanding the device file structure

▶The BREW Publisher Wizard automates the creation of the correct files and folders for your target device.

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BREW 2.x file system

▶All application directories are within the root folder: `brew`.

▶MOD Application files are stored in a folder named for your application, such as: `brew/myapplication`

  ▪ subfolders are not allowed

▶BAR files and other shared media, such as images, are stored in the `brew/shared` folder.

  ▪ Shared media can also be stored in the folder that contains the main application files

▶MIF files are stored in the root folder: `brew`

BREW 3.x file system

▶All application directories are within the `brew/mod` folder

▶MOD Application files are stored in a folder named for the application, such as `brew/mod/myapplication`

▶BAR files and other shared media, such as images, are stored in the `brew/shared` folder.

  ▪Shared media can also be stored in the folder that contains the main application files

▶MIF files are stored in the `brew/mif` folder

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Using BAR files to prevent unauthorized distribution

▶Authenticated BREW Developers have access to the BREW AppLoader, to add and remove files from BREW enabled devices.

- MOD, MIF and BAR files cannot be copied or moved from a device, ensuring that applications (files) purchased through the BREW Delivery System cannot be redistributed.
- Flash Lite 2.x for BREW Developers can secure external assets which are to be loaded at runtime (such as through `xml.load()`, `mc.loadMovie()`, `snd.loadSound()`, etc.), by appending a BAR (`.bar`) file extension.

For example, a readable but uncopyable XML file would be distributed as:

```
userData.xml.bar
```

Using BAR files to prevent unauthorized distribution

▶An application would be loaded from the device file system by the distributed Flash Lite 2.x for BREW application, using its regular name (no `.bar` extension), as:

```
var xml:XML = new XML();
xml.load("userData.xml");
xml.onLoad = function(success):Void
{
 // use the data
}
```

The Flash Lite 2.x for BREW Player will check first for the originally named asset, then check for the same name with a "`.bar`" file extension, loading the first it finds. So, external runtime assets can be safely distributed in an uncopyable manner.

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Using the BREW Publishing Wizard in Flash Professional 8

►The Flash Lite 2.1 for BREW Publishing Wizard for Flash Professional 8 (the "post-processor") streamlines the file and directory creation process for BREW deployment.

►The wizard may either be used once to configure a FLA, or be allowed to run each time a document is published.

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Launching the wizard

To intially launch the wizard:

1. Select File > Publish Settings > Flash

2. Set the Post-processor to Flash Lite for BREW

3. Press Settings
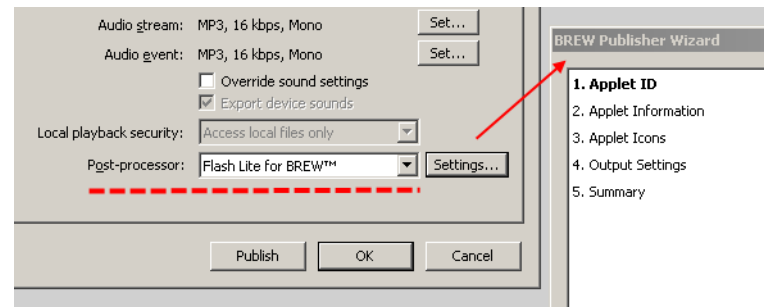
Launching the Wizard

Identifying your BREW applet

►A random Class ID will be assigned.

■ In actual deployment, an Authenticated BREW Developer must obtain a deployment Class ID from Qualcomm.

►The Applet Name value will default to the FLA name, which should be renamed for your desired name. It should be kept short, as it will display on the target device screen.

Note: the Applet name must begin with a letter, and cannot contain spaces or special characters (not even a dash "-").
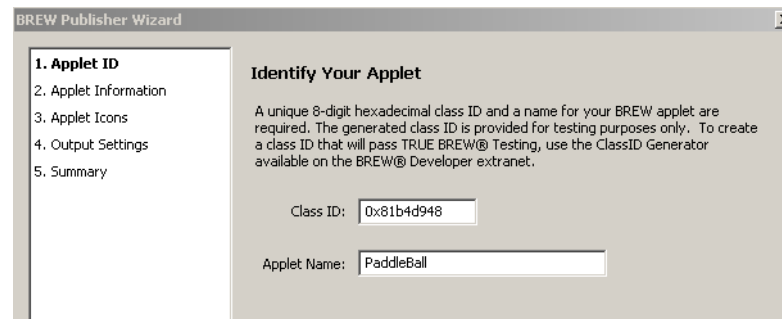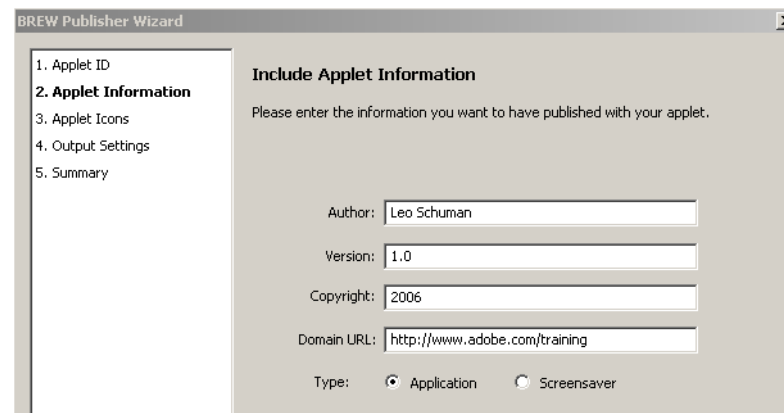

Identifying the Applet

setting Applet information

The Author, Version, Copyright, and Domain URL information is optional, but will be included in the compiled BREW files, if provided.

In live deployments, the Domain URL will control the domain, if any, to which the Applet has access at runtime (see Flash 8 Cross-Domain Security documentation for more informaiton).
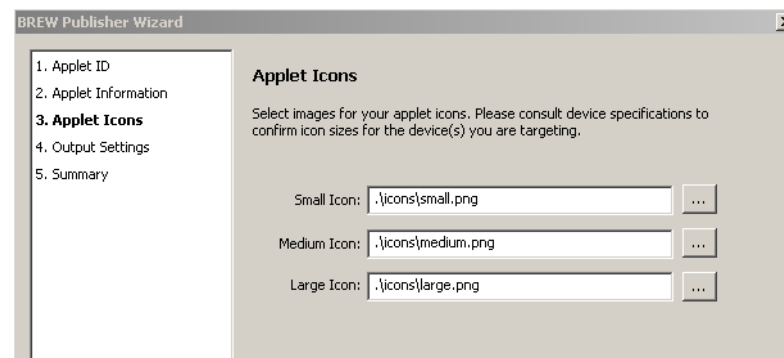

*setting Applet information*

Setting Applet icons

Icons are optional during testing, but will be required for authenticated deployment to the BREW Delivery System (BDS). The size requirements will vary by target device.


setting Applet icons

Defining Output Settings

▶The Output Settings define the file names and locations where your BREW application files will be generated, for both the BREW SDK Simulator, as well as the BREW device.

▶The directories will be created if they do not already exist. The application name becomes part of the directory structure.
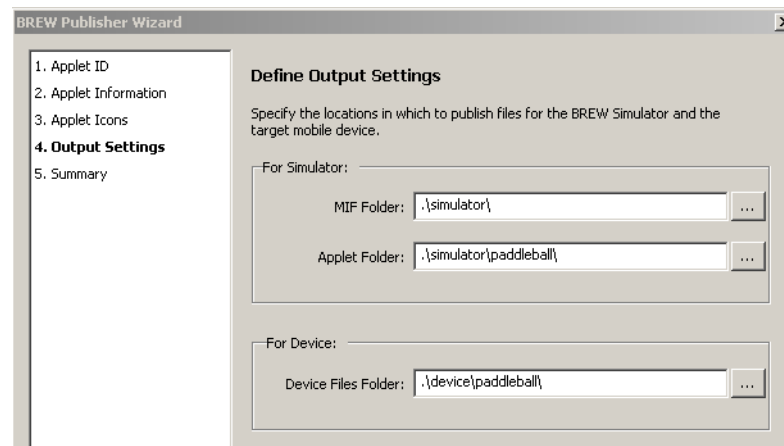
Defining Applet Output Settings

Completing and controlling the wizard

▶The final screen summarizes the settings. You may go back and change any setting before you Finish.

▶If you do not check `Do not show this Wizard on publish`, the Wizard will run each time the document is tested or published. If you check it, the Wizard will only run if invoked through the Post-processor `Settings` button.
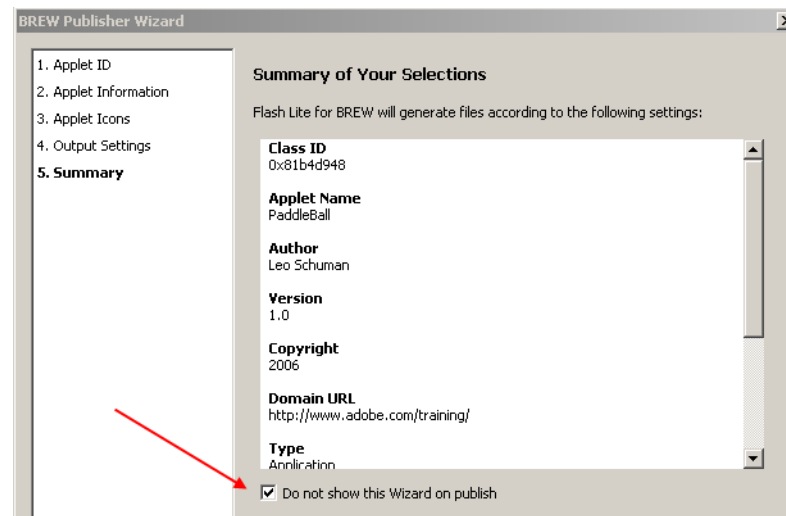
Summarizing the BREW Settings

Deploying to the BREW SDK Simulator

To test a Flash Lite 2.1 for BREW application

1. From the file system, copy the contents of your BREW-published application's `\simulator` directory to:

   `c:\Program Files\{BREW version}\SDK\Examples`

   Note: the \simulator directory will contain a MIF file, and a sub-directory named for your application with at least one DLL file. Copy these, not the \simulator directory itself.

2. Run the BREW SDK Simulator

3. Choose a target device to simulate

4. Navigate to and launch your application

Note: the default Device Pack in the BREW SDK Simulator simulates a very low memory device. You must be an Authenticatd BREW Developer to down load actual device simulators with larger, device-specific memory and keyboard and screen layouts. However, the simulated memory in the default device can be increased by editing the DSD configuration file for the Simulator. See the Flash Lite 2.1 for BREW documentation (installed with the Publishing Wizard) for detailed information on how to do this.

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Walkthrough 2: Using the BREW Simulator

In this walkthrough, you will perform the following tasks:

▶Use the publishing wizard in Flash 8

▶Test your application in the Qualcomm BREW Simulator.

Understanding the requirements for device testing

To upload and test a Flash Lite 2.1 for BREW application on a BREW enabled device, you need:

▶Flash Lite 2.1 for BREW device, including the Motorola RAZR series, LG VX9800, and Samsung a950. For current device list visit:

```
http://adobe.com/devnet/devices/verizon.html
```

▶PC-Device cable, available from the device manufacturer

▶Qualcomm BREW AppLoader software, available to Authenticated BREW Developers from Qualcomm. For more information visit:

```
http://brew.qualcomm.com/brew/en/developer/resources/ad/
  app_develop.html
```

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Understanding the requirements for device testing

▶Application files in the required formats, created by the Flash Lite 2.1 Publishing Wizard for BREW

- `MyApplication.mod`: core application file(s)

- `MyApplication.mif`: application configuration file

- `MyApplicationResource.bar`: external resources, such as sound, video, image, xml, and script files

- `MyApplication.sig`: device signature file, available to Authenticated BREW Developers for purchase and download

Note: DLL files are used solely in the BREW SDK Simulator, not on the device

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Walkthrough 3: Uploading an Application to a BREW Enabled Device

In this walkthrough, you will perform the following tasks:

►Connect the handset to a PC

►Use the Qualcomm AppLoader application to transfer the application to the handset

Summary

▶ The Qualcomm BREW (Binary Runtime Environment for Wireless) supports Flash Lite 2.1 content

▶ The BREW SDK, the Flash Lite 2.1 Update for Flash Professional 8, and the Flash Lite 2.1 for BREW Publishing Wizard must be installed to develop Flash content for BREW

▶ The Publishing Wizard is available through a new Post-processor option on the Flash Publish Setting dialog

▶ Five file types are used in BREW development, in addition to the FLA

- MOD (`.mod`) file: device application file
- DLL (`.dll`) file: simulator application file
- MIF (`.mif`) file: device configuration file
- SIG (`.sig`) file: device-specific signature file
- BAR (`.bar`) file: copy-protected, non-transferable asset files

▶ All BREW file and folder names are lower-case

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Summary

▶Asset files to which a .bar extension is added will be copy-protected and non-transferable, though still available to Flash Lite 2.1 for BREW

  ▪example: `face.jpg.bar,userdata.xml.bar`

▶For BREW SDK 3.1 (covered in this material)

  ▪MOD and SIG files are deployed to `brew/mod/applicationname`

  ▪MIF files are deployed to `brew/mif`

  ▪BAR and Assets files are deployed to either `brew/mod/applicationname` or `brew/shared`

▶The Flash Lite 2.1 for BREW Publishing Wizard creates \device and \simulator directories, with correctly named files based on the FLA, including icon files if provided

▶Authenticated BREW Developers have access to the AppLoader tool, SIG files, and other useful tools for on-device testing

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