Tracking Macromedia Flash Movies

Designer's Guide: Building Macromedia Flash Banners with Tracking Capabilities

To insert click throughs into a Macromedia Flash banner:

In Macromedia Flash, clickable elements are usually assigned to buttons. A button is a special type of symbol that contains 4 frames. Each frame represents one of the following "states" of the button: Up, Over, Down, or Hit. These four states determine how the button will visually behave when the user rolls their mouse over it or clicks on it.

To create a new button:

1. Select Insert > New Symbol, or press Control-F8 (Windows) or Command-F8 (Macintosh).

    Note: In Macromedia Flash 3 and earlier, deselect everything on the stage and choose Insert > Create Symbol

2. In the Symbol Properties dialog box, enter a name for the new button symbol and choose Button as the Behavior option. Click OK.

    Macromedia Flash will switch to symbol-editing mode. The Timeline header changes to display four consecutive frames labeled Up, Over, Down, and Hit. The first frame, Up, is a blank keyframe.

3. To create the image for the button's Up state, you can use the drawing tools, import a graphic, or place an instance of another symbol on the Stage. You can use either a movie clip or a graphic symbol in a button, but you cannot use another button in a button. To create an animated button, use movie clip symbols.
4. Select the second frame, labeled Over, and choose Insert > Keyframe. The button image from the first frame will appear on the Stage.
5. Change the button image for the Over state. Repeat steps 4 and 5 for the Down frame and the Hit frame.

    Note: The Hit frame is not visible on the Stage on playback, but it defines the area of the button that responds when clicked. Make sure that the graphic for the Hit frame is a solid area large enough to encompass all the graphic elements of the Up, Down, and Over frames. It can also be larger than the visible button. If you do not specify a hit frame, the objects in the Up state are used as the hit frame.
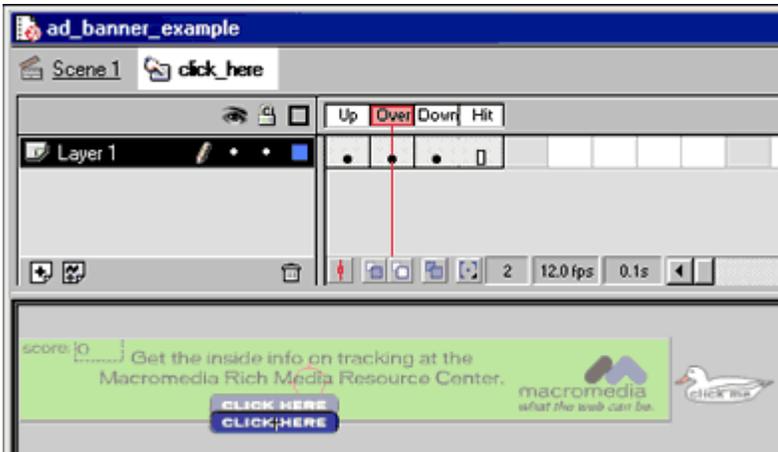
6. After defining the images of the four button states, choose Edit > Edit Movie to exit Symbol Edit mode.
7. Open the Library window by choosing Window > Library. Locate the button in the Library window and then drag the button symbol out of the Library onto the Stage. This creates an instance of the button in the movie. For information on assigning actions to the button instance refer to the documentation below for the version of Macromedia Flash that you are using:

To assign a simple action to a button (Macromedia Flash 4 and earlier):

1. In Edit Movie mode, select the button instance created in Step 7 above.
2. Make sure that Enable Buttons from the Control menu is unchecked.
3. Double-click the button to get the Instance Properties dialog box. (Note: In Macromedia Flash 2 this was the Link Properties: Button dialog box.)
4. Assign the action by selecting the Action tab in the Instance Properties dialog box. Then, click the plus (+) button and double click on the appropriate action.

   Note: In Macromedia Flash 2 assign the action using the Action pop-up menu in the Link Properties: Button dialog box. Only one action may be assigned to the button.

5. Make sure that Enable Buttons in the Control menu is checked, so that option is toggled back on. If the selected action has any associated parameters, those parameters will appear in the Parameter panel on the right side of the Actions panel. Choose or type the parameters appropriate for that action.

To assign a simple action to a button (Macromedia Flash 5):

1. In Edit Movie mode, select the button instance created in Step 7 above.
2. Choose Window > Actions to open the Actions panel.
3. In the Toolbox list on the left side of the panel, click the Basic Actions category to display the basic actions.
4. To assign an action, do one of the following:
   - Double-click an action in the Basics Actions category.

- o Drag an action from the Basic Actions category on the left to the Actions list on the right side of the panel.
- o Click the Add (+) button and choose an action from the pop-up menu.
5. If the chosen action has any associated parameters, those parameters will appear in the Parameter pane at the bottom of the Actions panel. (If the Parameter pane is not visible, click the small triangle in the lower right corner of the panel.) Choose or type the parameters appropriate for that action. For example, the getURL action shown below contains three parameters: URL, Window, Variables, and an option for Expression.

To assign a clickTAG for your advertisement:

The clickTAG is the tracking code assigned by the ad serving network to an individual ad. The clickTAG allows the network to register where the ad was displayed when it was clicked on. This click through data is reported to the ad serving servers so advertisers may determine the effectiveness of their campaign.
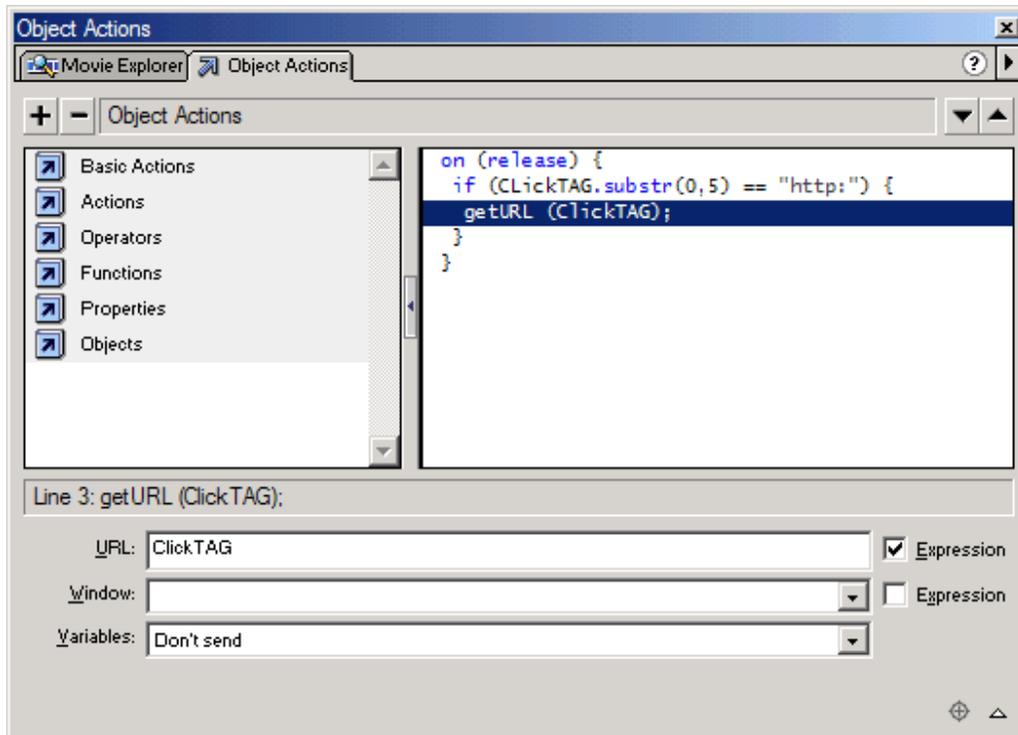
The code below will allow ad serving networks to dynamically assign a clickTAG to their ad.

In this example, a getURL action is being assigned to a button that will navigate the browser to ["clickTAG"]. The "getURL(clickTAG)" statement appends the variable data passed in via the OBJECT EMBED tag and navigates the browser to that location. It is the tracking code assigned by the ad serving network, which allows them to register a user's click on that advertisement.

<EMBED src="ad_banner_example.swf?clickTAG= http://adnetwork.com/tracking?http://www.destinationURL.com">

The code below will allow ad serving networks to dynamically assign a clickTAG to their ad:

```
on (release) {
   if (clickTAG.substr(0,5) == "http:" || clickTAG.substr(0,6) == "https:") {
      getURL(clickTAG);
   }
}
```

```
Object Actions
 Movie Explorer  Object Actions

+ −  Object Actions                              ▼ ▲

  Basic Actions      ▲     on (release) {
  Actions                    if (CLickTAG.substr(0,5) == "http:") {
  Operators                    getURL (ClickTAG);
  Functions                  }
  Properties               }
  Objects            ▼

Line 3: getURL (ClickTAG);

     URL:  ClickTAG                             ☑ Expression
  Window:                                   ▼  ☐ Expression
 Variables:  Don't send                     ▼
```

Note: The ActionScript in this Flash advertisement is verifying that the clickTAG URL begins
with "http:". This is an important security measure. If you do not take this precaution, a
malicious HTML page could source your SWF and pass a clickTAG URL that begins with
"javascript:" or another scripting pseudo-protocol. If your ActionScript code were to call getURL
with a maliciously crafted JavaScript URL, it would be possible for the site serving the malicious
HTML page to obtain the contents of your HTTP cookies or perform other actions on your site's
behalf.

Below is a workflow diagram of how the variable is passed from the Macromedia Flash
advertisement to the ad serving network, then redirected to the URL.

HTML Web page with Macromedia Flash advertisement

↓

Macromedia Flash advertisement with variable

↓

Tracking HREF passed into Macromedia Flash via HTML
<OBJECT> and <EMBED> tags

<EMBED SRC=banner.swf?ClickTAG=
http://adnetwork.com/tracking?
http://www.destinationURL.com

↓

Macromedia Flash advertisement navigates browser to
value passed in

Additional Information

To learn more about buttons and their construction, study the sample buttons included with Macromedia Flash. In Macromedia Flash 5, sample buttons can be found in the Windows > Common Libraries > Buttons menu. In Macromedia Flash 4 they are found by choosing Libraries > Buttons. In Macromedia Flash 2, they are found in the Xtras menu.

For a step-by-step guide to creating a button, see the Lessons included with Macromedia Flash 5. Choose Help>Lessons>06 Buttons.