

## How to resize content for multiple screens

Many mobile devices are on the market and their screen sizes vary. A common challenge when developing mobile applications (or web content for mobile devices) is to make your content look the same (or at least look good) on every device. You want to make sure your content fits each screen perfectly. You can meet this challenge in a couple of ways: You can design mobile applications that target a specific device and screen size—reusing and resizing content to build separate versions for each device. Or you can use ActionScript and auto-scaling features to create a single version that automatically scales to match each screen.

### Creating and sizing content for multiple screens

If you're creating multiple versions of the same content and adjusting a design to match multiple screen sizes, you can use the following features in Adobe Flash Professional to adapt your content for each device.

- Use Save As to create a new file based on an existing file.
- Use Adaptive Scaling to resize content objects automatically to match the screen size.
- Adjust content objects manually by using Free Transform or by changing values in the Properties panel.
- Copy and paste layers and content from one Flash Professional document to another.

To save an existing document as a new file:

1. Open the Flash Professional document you want to adapt for multiple screens.

2. Select File > Save As.

The Save As dialog box appears.

3. Enter a name for the new document and click Save.

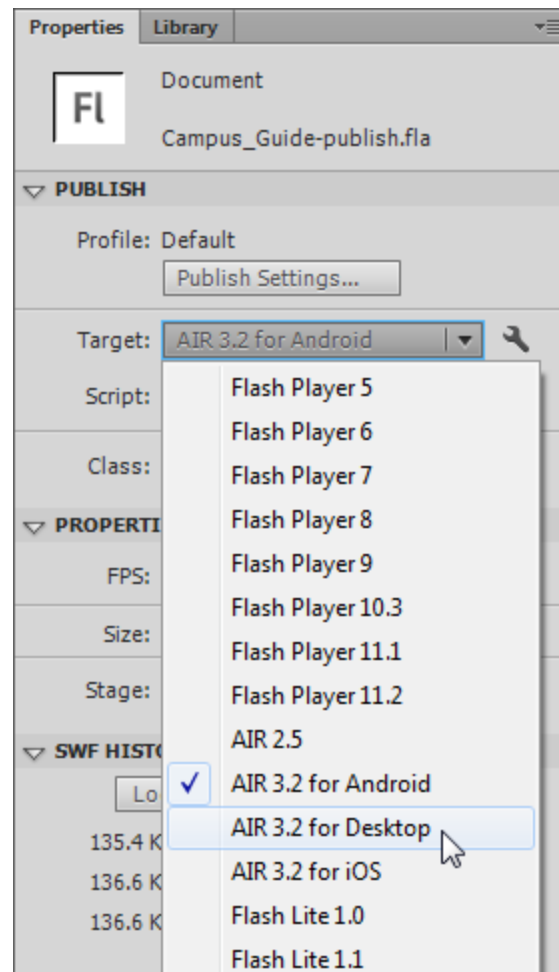
You now have an exact copy of the original file. You can adapt the file for another screen by changing the document's publish settings, adjusting the document dimensions, and scaling its content.

4. In the Publish section of the Properties panel, select a new target runtime from the Target menu (**Figure 1**).

In this example, we designed the application for Android mobile devices. You can change the target to AIR For IOS to create a version for the Apple iPhone or other iOS device.

After setting up the new document, you need to edit the document dimensions to match those of the new target screen.

When you change document dimensions, you can use Adaptive Scaling to help resize your content to match.



**Figure 1** Properties panel, Publish section

To use adaptive and manual scaling to resize content:

1. Select Edit > Preferences (Windows) or Flash > Preferences (Mac OS) and select the General Category in the Preferences dialog box.
2. Make sure both Scale Content options (Align Top Left and Include Locked And Hidden Layers) are selected (**Figure 2**).

The second option ensures that when Adaptive Scaling is enabled, the content in locked and hidden layers will scale along with the rest of the document.

3. Click OK to confirm the document preferences.
4. In the Properties section of the Properties panel, click the Edit Document Properties button (**Figure 3**).

The Document Settings dialog box appears (**Figure 4**).

Notice the current size of the document. In this example it's 480 x 800, the default size for AIR for Android apps. If you were adapting this design to match an iOS device screen, you'd change the document size to 640 x 960, the default dimensions for AIR for iOS apps.

5. Change the document dimensions to 640 (width) and 960 (height), or other dimensions that match your target screen.
6. Dimensions represent the size of the Stage.

When you change the Stage dimensions, you also have the option to turn on Adaptive Scaling options. These include:

- *Adjust 3D Perspective Angle:* Adjusts the position and orientation of 3D objects on the Stage to maintain their appearance relative to the edges of the Stage.
- *Scale Content With Stage:* Automatically scales the contents of the Stage relative to the change in Stage size.

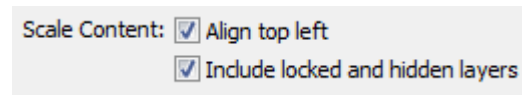
7. Select Scale Content With Stage.

**Note:** If your document includes 3D objects, you also want to select the option to adjust the 3D perspective angle.

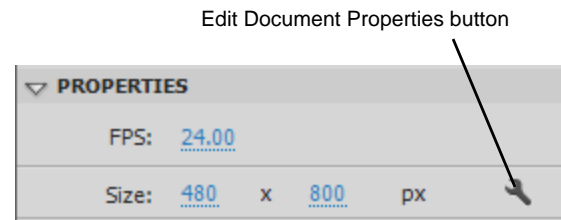
8. Click OK.

The Stage area changes size. Flash Professional does its best to scale the content to match the Stage. Depending on how accurate the scaling, you may need to manually fine-tune the size of some content objects.

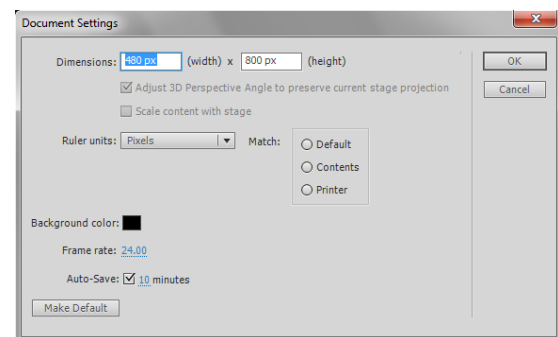
In this example, Flash Professional came close to matching the content to the Stage, but some minor adjustments are needed (**Figure 5**).



**Figure 2** Preferences dialog box, Scale Content options



**Figure 3** Properties panel, Properties section



**Figure 4** Document Settings dialog box



**Figure 5** Resized document and content

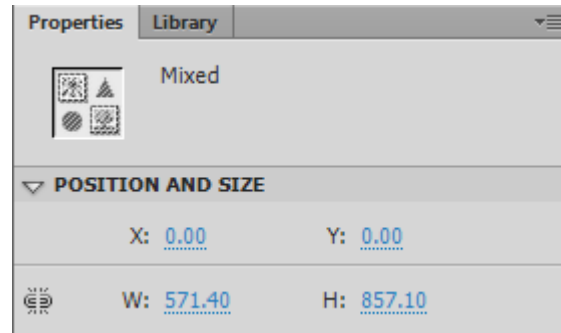
9. Select Edit > Select All.

This selects all content objects in the current frame. You can resize the mixed selection as a single object by using the Free Transform tool or by changing the Position And Size values in the Properties panel (**Figure 6**).

10. Enter new dimensions for the mixed selection by changing the width (W:) and height (H:) values in the Position And Size section of the Properties panel.

The group scales together to match the new dimensions (**Figure 7**).

**Note:** You may need to resize other content objects that appear in the timeline. Resizing the content can also distort your artwork when the new document dimensions have a different aspect ratio (height to width) than the original document.



**Figure 6** Properties panel, Position And Size



**Figure 7** Manually scaled content

To copy layers and content from one document to another:

1. Open a completed Flash Professional document that you want to adapt to another screen.
2. Open a new blank document and specify settings to match the new target device.
3. Use the document tab in the Flash Professional workspace to switch back to the file that contains your finished content (**Figure 8**).
4. Select the top layer in the Timeline panel.
5. Shift-click the bottom layer in the Timeline panel.

This selects all layers and content in the timeline (**Figure 9**).

**Note:** You can also select individual layers or multiple noncontiguous layers by holding down Ctrl (Windows) or Command (Mac OS) as you select.

6. Right-click (Windows) or Control-click (Mac OS) and select Copy Layers from the context menu.
7. Use the document tab to change to your new blank document.

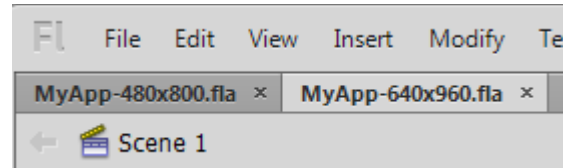
The new document includes one empty layer named Layer 1.

8. Right-click (Windows) or Control-click (Mac OS) Layer 1 in the Timeline panel and select Paste Layers.

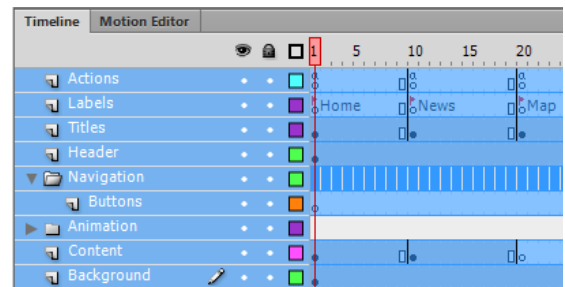
The layers are added to the new document's timeline directly above Layer 1 (**Figure 10**).

9. Select Window > Library to open the Library panel in the new document.

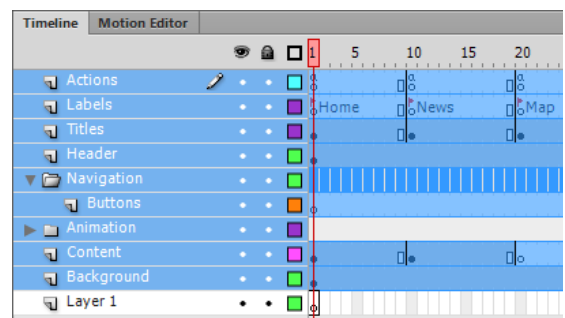
The new document's library includes every object from the source file (**Figure 11**).



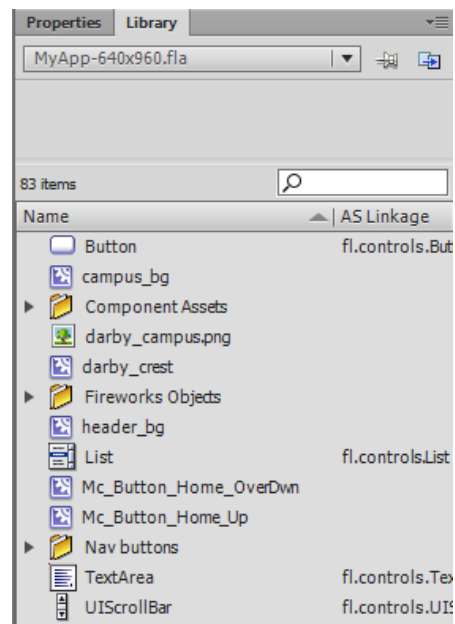
**Figure 8** Document tabs



**Figure 9** Timeline panel, source document



**Figure 10** Timeline panel, new document



**Figure 11** Library panel, new document

## Using ActionScript code to scale content to multiple screens

At times you need your content to scale automatically to fit each end user's screen. For example, a mobile app needs to rotate and scale when users turn their tablets from portrait to landscape orientation. You may also be developing web content that you want mobile users to access from any device. This content needs to scale to adapt to each user's screen size.

One way to accomplish this is to use ActionScript code that controls content scaling. In this guide you create a new document and use ActionScript code to control document scaling. To test the ActionScript code that controls object position and scaling, you create content objects and give them instance names that match the references to these objects in the sample ActionScript code.

To use ActionScript to scale content to multiple screens:

1. Start Flash Professional and open a new AIR For Android document with white as the document background color.
2. Select View > Magnification > Fit In Window so you can see the entire Stage.
3. Create the following sample objects in the application:

**Note:** You can import artwork or use the drawing tools to create the sample content objects (**Figure 12**).

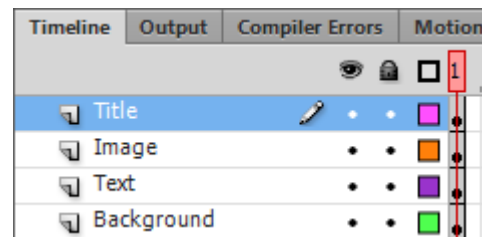
- *Background layer:* Artwork that fills or extends beyond the Stage. For this example, we used the Deco tool to create a Vine Fill pattern. Convert the background artwork to a movie clip symbol and name the instance **back\_art**.
- *Text layer:* TLF text that fills the lower quarter of the Stage and is the same width as the Stage. Name the TLF text instance **main\_txt**.
- *Image layer:* Add an image or draw a simple shape. Position the shape above the text. Convert it to a movie clip symbol and name the instance **main\_image**.
- *Title layer:* Use the text tool to create a sample title. Position it near the top of the screen. Convert the title to a movie clip symbol and name the instance **app\_title**.

The Timeline panel now includes the layers and sample content to add the position and scale ActionScript code (**Figure 13**).

Before you add the code, however, you need to test the movie to see how it scales.



**Figure 12** Background image



**Figure 13** Timeline panel



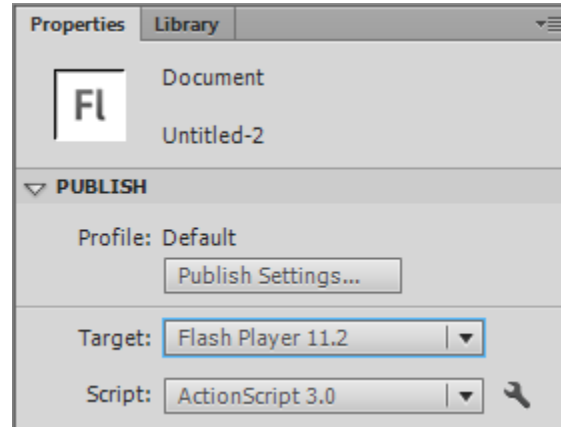
4. Make sure nothing is selected on the Stage.
5. In the Properties panel, change Publish Target from AIR 3.2 For Android to a Flash Player version—for example Flash Player 11.2 (**Figure 14**).

Changing to Flash Player will let you test in Flash Professional and resize the preview window.

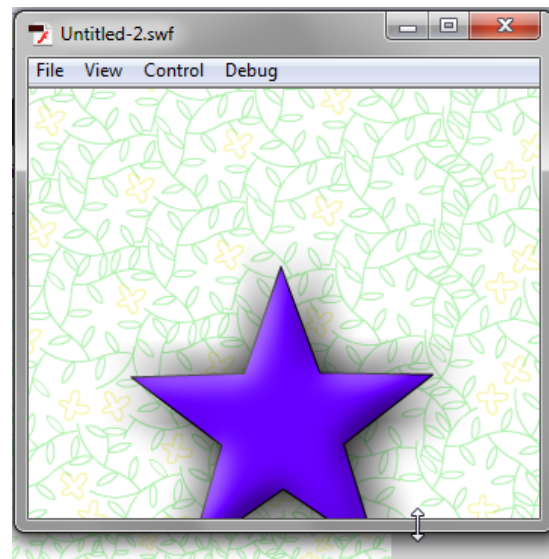
6. Select Control > Test Movie > In Flash Professional.
7. Drag the edges of the preview window to see what happens to the content when the window or screen size is different from the original dimensions of the application.

Because the content does not scale automatically along with the screen size, it gets cut off (**Figure 15**).

8. Close the preview window.
9. Insert a new layer in the Timeline panel and name it Actions.
10. Select Window > Actions to open the Actions panel.



**Figure 14** Properties panel, Publish settings



**Figure 15** Sizing the preview window

11. Enter or copy and paste the following code into the Action panel to prevent the Stage from scaling automatically:

```
//This code is to prevent the stage from scaling until you tell it to.  
stage.scaleMode = StageScaleMode.NO_SCALE;  
stage.align = StageAlign.TOP_LEFT;
```

12. Enter or copy and paste the following Event Listener to listen for when the window is resized and call the *setPosition* function to size and position objects on the Stage:

```
stage.addEventListener(Event.RESIZE, resizeLayout);  
function resizeLayout(e:Event):void  
{  
    setPosition();  
}
```

13. Enter or copy and paste the following code for the *setPosition* function that scales and positions the objects in the movie based on the size and position of the Stage:

```
function setPosition():void  
{  
    //Position elements according to the stage.stageWidth and stage.stageHeight  
    main_txt.autoSize = TextFieldAutoSize.LEFT;  
    main_txt.width = stage.stageWidth + 10;  
    main_txt.y = stage.stageHeight - main_txt.height;  
    app_title.x = stage.stageWidth / 2;  
  
    main_image.x = app_title.x;  
    main_image.y = main_txt.y - main_image.height;  
  
    back_art.height = stage.stageHeight;  
    back_art.width = back_art.height;  
  
    if (stage.stageWidth > stage.stageHeight){  
        back_art.width = stage.stageWidth;  
        back_art.height = back_art.width  
    }  
  
    back_art.x = stage.stageWidth/2;  
    back_art.y = stage.stageHeight/2;  
}
```

14. Close the Actions panel.
15. Select Control > Test Movie > In Flash Professional.
16. Drag the edges of the preview window to see what happens to the content when the window or screen size is different from the original dimensions of the application.

The content scales automatically to match the screen size and objects are repositioned as well as possible to match the intended design (**Figure 16**).

17. Close the preview window.
18. In the Properties panel, change Publish Target back to AIR 3.2 For Android and click the Edit Application Settings button (**Figure 17**).

The AIR For Android Settings dialog box appears.

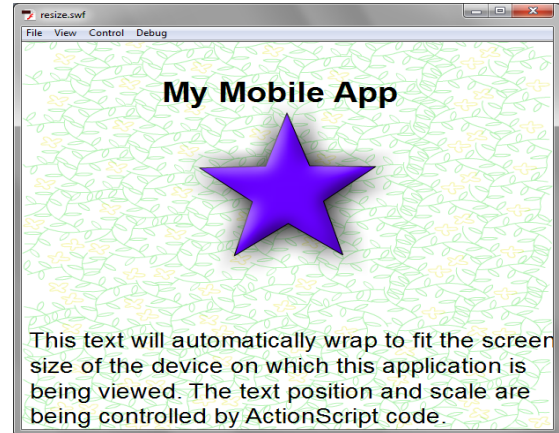
19. On the General tab, select Auto Orientation (**Figure 18**).

The app will automatically alternate between portrait and landscape view when users turn their mobile devices.

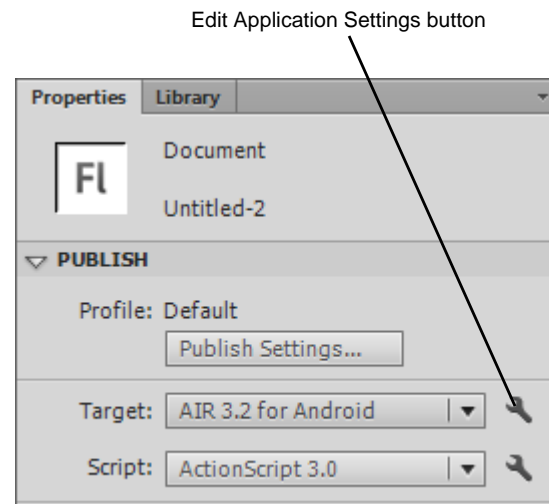
20. Select the Deployment tab and select Emulator Release (**Figure 19**).

This tells Flash Professional that you are testing the application instead of publishing the app for installation on a device.

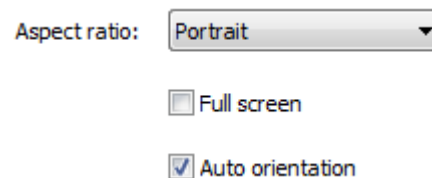
21. Click OK to save your changes and close the dialog box.



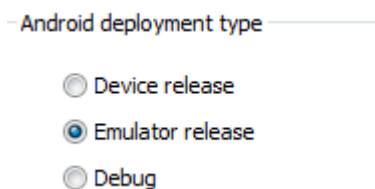
**Figure 16** Sizing the preview window



**Figure 17** Properties panel



**Figure 18** AIR For Android Settings dialog box, General tab



**Figure 19** AIR For Android Settings dialog box, Deployment tab



- 22. In the Properties panel, click the Edit ActionScript Settings button (Figure 20).

The Advanced ActionScript 3.0 Settings dialog box appears (Figure 21).

- 23. Select the Library Path tab.
- 24. Open the Default Linkage menu in the Runtime Shared Library Settings section of the dialog box and choose Merged Into Code (Figure 21).
- 25. Click OK.

This embeds any shared libraries such as TLF Text libraries used to format text and prevents Flash Professional errors when you test or publish the mobile application.

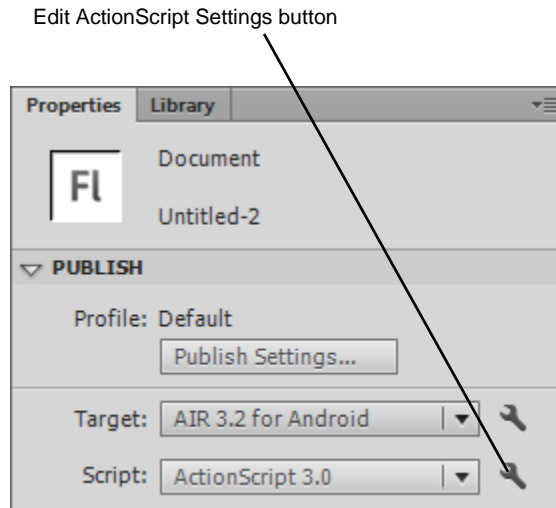


Figure 20 Properties panel

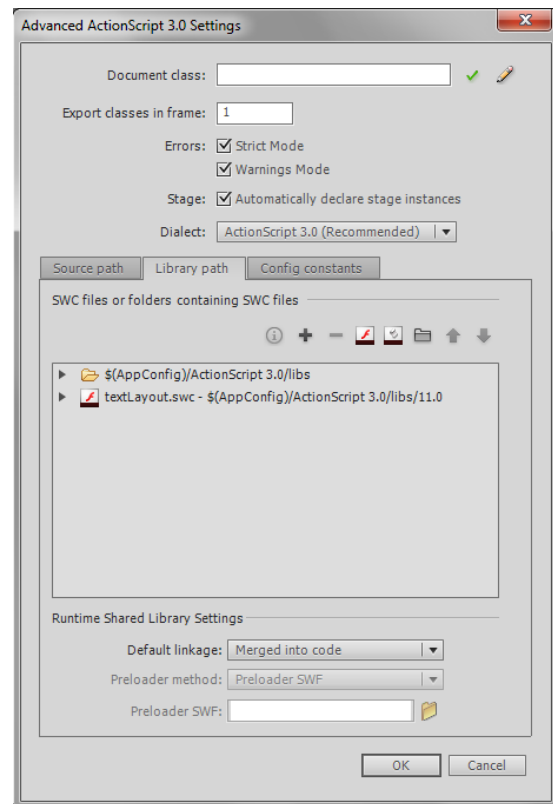


Figure 21 Advanced ActionScript 3.0 Settings dialog box

26. Select Control > Test Movie > In AIR Debug Launcher (Mobile).

The application opens and the Device preview window appears (**Figure 22**). It shows how the app appears on an Android device in the vertical (portrait) position.

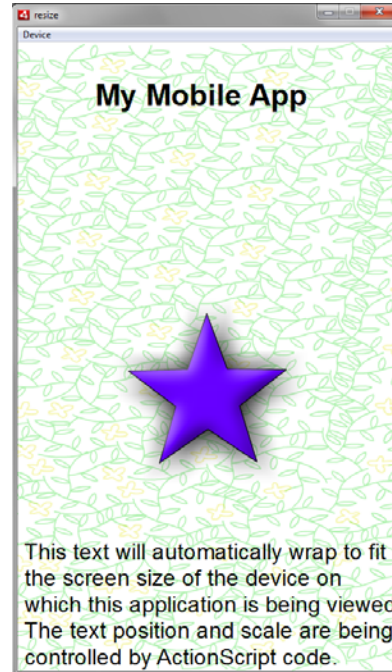
27. (Windows) Open the Device menu and select Rotate Right (**Figure 23**).

The app rotates to horizontal (landscape) orientation and its contents scale and reposition to fit the screen (**Figure 24**).

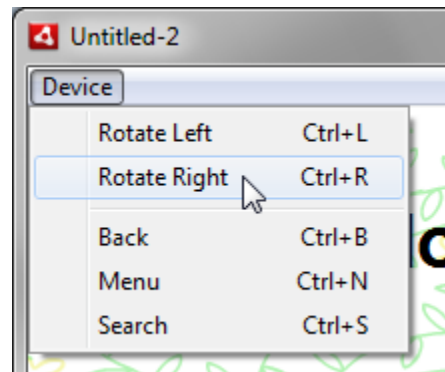
28. (Mac OS) Make sure the Accelerometer section is visible. Drag the Z axis slider to either the left or right until the number of degrees is  $-90$  or  $90$ , respectively.

You can also select the degree value for the Z axis and enter  $-90$  or  $90$ .

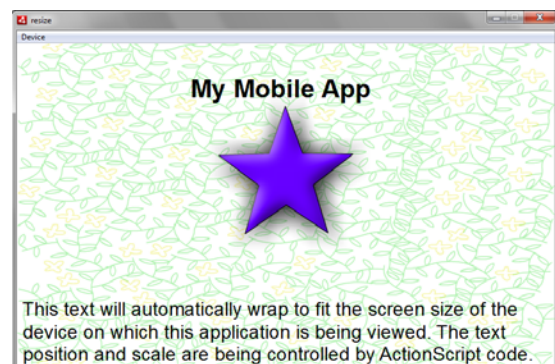
The device rotates 90 degrees and the app appears in horizontal (landscape) orientation. Its contents scale and reposition to fit the screen.



**Figure 22** Device preview window



**Figure 23** Device menu



**Figure 24** Horizontal (landscape) orientation