

GRAPHICS IN A FLASH: AN INTRODUCTION TO VECTOR-BASED WEB GRAPHICS

Due to the inclusion of automatic anti-aliasing, vector graphics are now as much at home on the Web as anywhere else. The added benefits of scaleable images, small file sizes, interactivity, and a range of other features are generating an explosion of vector graphic use on the Web. And Macromedia Flash has been the driving force behind this explosion.

A NEW HOME FOR VECTOR GRAPHICS

Macromedia Flash is a full-featured package that is quickly becoming the primary delivery vehicle for graphics on the Web. From still images and animated segments to buttons and interface components, it can be used to create objects that were once only deliverable as raster images, and even some that have never been possible on the Web before. With the breadth of content that needs to be pushed over an already busy Internet, Flash presents significant benefits for content developers.

Anti-Aliasing

Flash-based content provides the ability to display any range of elements, at any size, with anti-aliased (smoothed) edges. Unlike raster graphics, where scaling an image increases file size, these benefits come with no change in file size. Complex blends, minute details, eight-bit transparency, and animated objects, are automatically anti-aliased at any size. Flash also includes a feature that allows users to dynamically zoom graphic content and print Web content with no loss of detail.

Animation

Typically, animation on the Web is achieved with GIF files, scripting languages such as JavaScript, or programming languages such as Java. Flash provides a completely vector-based environment for creating animations. It supports animations of any size, from full-screen to icon-sized, and it can import raster images, bringing creation and development capabilities full circle.

Interactivity

Probably the most exciting thing about Flash is that developers now have the ability to create true graphical user interfaces and interactive experiences on the Web. Flash excels at delivering rich graphics for realistic user interfaces, as shown in Figure 1. From buttons and slider bars to complex and original elements, authors can now create a unique user experience without the tremendous overhead typically associated with raster graphics.



Figure 1. Flash enables graphical user interfaces on the Web, making navigation more intuitive and user-friendly.

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Scripting

Internally, Flash offers two scripting options: FlashScript and ActionScript. FlashScript allows Flash movies to communicate with other technologies such as JavaScript, VBScript, Java, C, and Visual Basic. ActionScript, which is closely modeled after the JavaScript Core Language, is an internal programming language that can be used to program things such as interactive games inside Flash, as shown in Figure 2.



Figure 2. Due to Flash's scripting capabilities, Web authors can create unique graphically based experiences.

Sound

One of the most intriguing things about Flash is its ability to integrate audio. Sound files within authored Flash movies are stored in the SWF file format and can be compressed with one of the newest technologies, MP3, as well as standard ADPCM compression. MP3 offers tremendous compressibility, making it possible to create long-playing animations with voice-overs or music with much smaller files. Moreover, since the audio is stored inside the SWF file, no external references, additional HTML code, plug-ins, or helper applications are required.

IF YOU CAN DREAM IT

In the past, imaginative Web production was severely limited by raster file sizes. Now, almost anything you can dream up could probably be integrated on the Web. There are some limits to what Flash can do. But it offers a unique alternative and as the volume of Web content increases, Flash movies will continue to play an increasing role in development and delivery of Web-based media.