

Overview

Web site publishers are limited when providing printable content for their users. Providing print-formatted HTML requires extra production time and the printed output can differ from one browser to the next. Providing print-optimized files requires the launching of a separate application and the download of large files.

Flash Player printing solves these problems. Flash Player printing lets Flash developers produce once for multiple platforms and browsers. Developers now have total control over both artwork displayed on the screen and on the printed page. Flash delivers the best display of graphics on the Web, and now provides complimentary functionality for print.

Flash Player printing

Flash Player version 4.0.20 and later prints Flash content as vector graphics at the high resolutions available from printers and other output devices. Printing as vector graphics eliminates the pixelated effects resulting from printing low-resolution bitmap graphics at high resolutions and allows Flash artwork to be scaled and printed at any size.

There are two ways users can print Flash movies directly from the Flash Player in the browser. They can use the Print command in the Flash Player context menu (Right-click, Windows, or Control-click, Macintosh), or they can use a button to which you as a Flash author have assigned a print parameter.

Flash Player printing has several advantages over printing Flash content using the browser's print command. For example, as a Flash author, you can:

- ▶ Specify which frames in a Flash movie can be printed. This allows you to create layouts appropriate to printing and to protect material from unauthorized printing.
- ▶ Determine the print area of frames.
- ▶ Specify whether frames are printed as vectors (to take advantage of higher resolutions) or as bitmaps (to preserve transparency).
- ▶ Assign print parameters to print frames from movie clips, whether or not the movie clips are visible. This allows you to provide printable material without using valuable browser space.

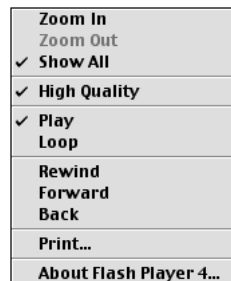
To see how Flash Player printing works, install the the latest version of the Flash Player available from <http://www.macromedia/downloads/>. Then open the file `ad_banner.html` included in the Flash Print Authoring SDK or go to <http://www.macromedia.com/support/flash/player/flashprint/>.

Printing from the Flash Player

Using version 4.0.20 (Macintosh), 4.0.25 (Windows), and later of the Flash Player, you can print frames directly from any Flash movie by using the Print command in the Flash Player context menu. In addition, movies in which certain frames are labeled for printing or page layout can be printed according to specific print definitions applied by the author.

To print Flash movie frames using the Flash Player context menu Print command:

- 1 Right-click (Windows) or Control-click (Macintosh) in the Flash movie in the browser window to open the Flash Player context menu.
- 2 Choose Print.



Select Print in the Flash Player context menu.

- 3 In the Print dialog box, select an option for Print Range:
 - ▶ In Windows, select All to print all frames in the movie if no frames are labeled, select Pages, and enter a range to print the labeled frames in that range, or select Selection to print the current frame.
 - ▶ In Macintosh, select All to print the current frame if no frames are labeled or to print all labeled frames, or select Pages and enter a range to print the labeled frames in that range.

Note: Pages in the Print dialog box indicate frames in the Flash movie. Also, it is possible to disable printing by dimming the Print command in the Flash player context menu. For more information, see "Designating printable frames or disabling printing" on page 4.

- 4 Select other print options, according to your printer's properties.
- 5 Click OK (Windows) or Print (Macintosh).

For more control over what users print, include a print button within your Flash movie, eliminating the need to use the Flash Player context menu. For more information about this technique, see "Assigning a print parameter" on page 5.

Guidelines for preparing movies for printing

Use the new Flash Player printing feature to print catalogs, coupons, information sheets, receipts, or invoices from Flash movies. Before you begin creating a printable Flash movie, review the following guidelines for tips on how to prepare new Flash movies and update existing Flash movies to make the best use of Flash Player printing.

Note: The tasks described in this article assume that you are familiar with several procedures in Flash, including working with timelines, adding labels to frames, assigning actions to frames and buttons, working with movie clips and loaded movies, and publishing movies. For more information on these procedures, see *Using Flash* or Flash 4 online Help.

- ▶ Use the Get URL action with a print or printAsBitmap URL parameter to designate printable frames.
- ▶ The printable frames you designate with the print parameters can be in any timeline, including the main timeline or the timeline of any movie clip or loaded movie level.
- ▶ The Flash Player context menu only prints frames in the main timeline. Specifying an explicit print area (using #bframe or #bmax) is not supported when printing from the context menu. To control print area, use the frame label (#b). Color effects (including transparency) are also not supported when printing from the context menu. For more information, see “Printing frames containing transparency or color effects” on page 13 and “Specifying print area” on page 7.
- ▶ All shapes, symbols, bitmaps, text blocks, and text fields can be printed. However, the printAsBitmap parameter must be used to print frames with objects containing transparency or color effects. For more information, see “Printing frames containing transparency or color effects” on page 13.
- ▶ Changing the property of a movie clip with Set Property, tweening, or any transformation tool does not affect how a movie clip prints. The designated frames of the movie clip print as they appear in the master Library symbol. This allows you to print movie clips with `_visibility` set to false.
- ▶ A movie clip needs to be on the Stage or work area and given an instance name in order to be designated for printing. If a movie clip is on the work area, you must use either a print modifier (#bmax, #bframe) or the #b label to designate a print area for the specified movie clip.
- ▶ Levels in a Flash movie are not composited on print output.
- ▶ All elements must be fully loaded to print. Use the `_framesloaded` property or the If Frame is Loaded action to check whether the printable content is loaded.

- ▶ The Flash Player printer driver obeys the HTML settings dimension, scale, and alignment in the Publish Settings dialog box.
- ▶ PostScript and non-PostScript printers are supported by Flash Player printing. Non-PostScript printers convert vectors to bitmaps.
- ▶ Flash Player converts scalable graphics to PostScript before printing. Converting to PostScript causes the print file size to be much larger than the size of the Flash movie in the browser. Print file size affects memory requirements and network demands, when applicable. On the Macintosh or in Windows you can approximate the PostScript file size by exporting the movie from Flash, Freehand, or Adobe Illustrator as an EPS file and checking the file size of the printable frame.
- ▶ For a list of supported Flash Player printing platforms, see “Flash Web Printing for eBusiness” on the Macromedia Web Site (<http://www.macromedia.com/software/flash/open/webprinting/faq.html>).

Designating printable frames or disabling printing

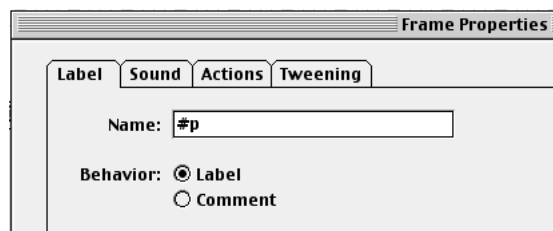
Add labels to frames to specify selected frames as printable, or to disable printing from the Print command in the Flash Player context menu. Each frame designated as printable prints on its own page. If you don't designate any frames as printable, all frames in the specified timeline can print.

Note: If you disable printing from the Flash Player context menu, you can still print frames using the browser Print command. This command is a browser feature and there is no way to control or disable it using Flash.

To designate printable frames:

- 1 With a movie open in Flash, select a frame in the Timeline and choose Modify > Frame.
- 2 In the Frame Properties dialog box, click the Label tab.
- 3 For behavior, choose Label.

- 4 In the Name field, enter:
#p



In the Label tab of the Frame Properties dialog box, enter #p in the Name field to specify the frame as printable.

- 5 Click OK.

- 6 Repeat steps 1-5 for each frame you want to designate as printable.

After the movie is published, choosing Print in the Flash Player context menu can print all frames labeled in the main timeline.

If you don't want any frames in the main timeline to be printable, you must either disable the Print command in the context menu, or remove the context menu altogether.

To disable printing in the Flash Player context menu, do one of the following:

- ▶ To dim the Print command, repeat steps 1-3 above and enter:
!#p
as the frame label in step 4. You must place this label on a frame in the main timeline. You only need to specify one label in a movie with !#p to dim the Print command in the context menu.
- ▶ To remove the Flash Player context menu, in Flash choose File > Publish Settings and uncheck Display Menu in the HTML tab.

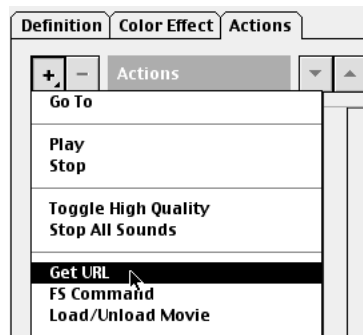
Assigning a print parameter

You allow users to print frames by assigning a Get URL action with a print parameter (print or printAsBitmap) to a button or frame in a Flash movie. Enter the print parameter in the URL parameter field. In the Window parameter field, enter the path to the timeline that contains the frames you designate to print. Use Tell Target path syntax. For example, enter / to specify the main timeline or / instancename to specify a movie clip on the main timeline.

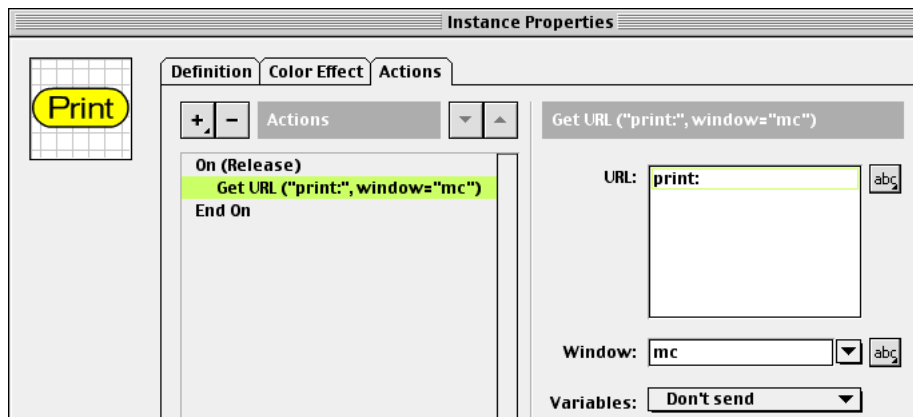
Only one timeline can be designated for printing in a single Get URL action. If you attach multiple Get URL actions to a single button or frame, the Print dialog box appears for each Get URL action executed. You can use #p to specify any number of frames within each timeline to print, however.

To assign a Get URL action with a print parameter to a button:

- 1 Double-click the button, and select the Actions tab in the Instance Properties dialog box.
- 2 Click + (plus) and choose Get URL from the pop-up menu.



- 3 In the URL parameter field of the Get URL action, type the following:
print:
- 4 Specify the path to the main timeline or the instance name of a movie clip or loaded movie level (_levelX, where X is the level number into which the movie was loaded) in the Get URL Window parameter field. Use Tell Target path syntax.



Use the Get URL action to enter the print: parameter. Enter the path to the timeline in the Window parameter field. Set variables to Don't send.

- 5 Click OK.

You can also assign a Get URL action with a print parameter to a frame in a Flash movie. When the playback head reaches the designated frame, the Get URL action executes and a system Print dialog box appears.

To assign a Get URL action with a print parameter to a frame:

- 1 Double-click the frame, and select the Actions tab in the Frame Properties dialog box.
- 2 Repeat steps 2-5 above.

The background color that prints is the Background color you set in the Flash Movie Properties dialog box.

To print a background color that is different from the movie Background color, do one of the following:

- ▶ Place a shape of the intended printing background color on the lowest layer of the timeline (in the frames marked for printing with #p).
- ▶ Choose Modify > Movie to change the Background color to the intended printing background color. This changes the background color of the entire movie, including movie clips and loaded movies. To maintain the background color for nonprinting frames, create a shape using the desired background color. Place it covering the stage on the lowest layer of all frames that are not designated to print.

Specifying print area

By default, the movie's Stage determines the print area. Any object that extends off the Stage is clipped and does not print. Loaded movies, it is important to note, use their own stage size for print area; they do not inherit the main movie's stage size. There are three ways to set up the print area if you don't want to use the movie's stage size.

- ▶ Use the frame label #b to designate the bounding box of an object in one frame as the print area for all frames. For example, use #b if you want to print a full page data sheet from a Web banner.
- ▶ Use the print parameter modifier #bmax to designate the composite bounding box of all printable frames in a timeline as the print area. For example, use #bmax if you want to print multiple frames that share a registration point.
- ▶ Use the print parameter modifier #bframe to designate the bounding box of the objects in each printable frame of a timeline as the print area. This changes the print area for each frame and the objects scale to fit the print area. For example, use #bframe if you have different size objects in each frame and you want each object to fill the printed page.

Note: The print area modifiers #bmax and #bframe can only be used with the print or printAsBitmap parameters. Using either the #bmax or #bframe modifier overrides the #b label.

To designate the bounding box of an object in one frame as the print area:

- 1** With a movie open in Flash, choose a frame that you have not specified to print with a #p frame label.
- 2** Create a shape on the stage the size of the desired print area.
You can also choose a frame with any object of the appropriate print area size, but this frame will not print.
- 3** Select the frame in the Timeline and choose Modify > Frame.
- 4** In the Frame Properties dialog box, click the Label tab.
- 5** For behavior, choose Label.
- 6** In the Names field, enter:
#b
You can enter one #b label in each timeline. If you enter more than one #b label in a timeline, only the first occurrence is used to specify print area.
- 7** Click OK.

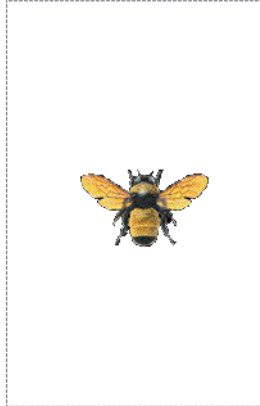
Printed results with and without using #b

Flash movie dimension

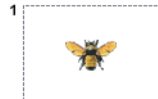


frame properties labeled "#p"

Printed result



Flash movie dimension



1st frame properties labeled "#p"



2nd frame properties labeled "#b"



Onion skin view

Printed result

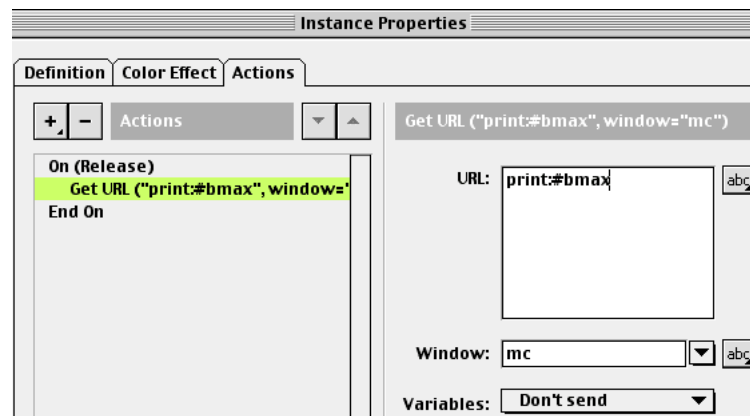


Use the frame label #b to designate the bounding box of an object in one frame as the print area for the whole timeline. If no print area modifier is used, the print area defaults to the Stage size.

To designate the composite bounding box of objects in multiple frames as the print area:

- 1 Follow the steps in “Assigning a print parameter” on page 5 to assign a print parameter to a Get URL action on a button or frame.
- 2 Select the button or frame to which you assigned the Get URL action.
- 3 Choose Modify > Instance (button) or Modify > Frame (frame).

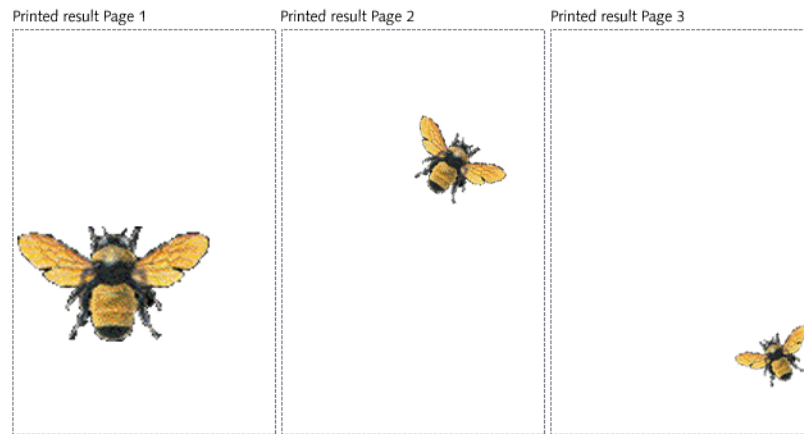
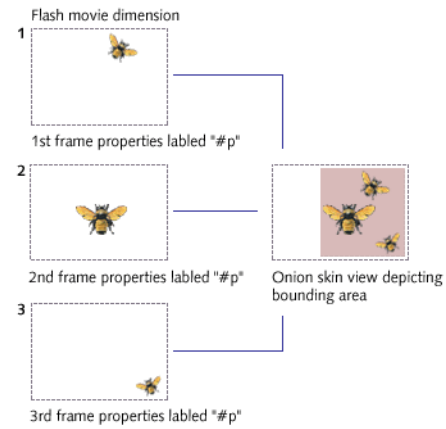
- 4 In the Instance Properties or Frame Properties dialog box, click the Actions tab.
- 5 After print: in the URL parameter field of the Get URL action, type the following:
#bmax



Enter #bmax after print: or printAsBitmap: in the URL parameter field of the Get URL action.

- 6 Click OK.

Printed results using #bmax



Use #bmax to setup the print area as the composite bounding box of each frame.

To designate the bounding box of the object in each printable frame as the print area (scaling each object to fit the print area):

- 1 Follow the steps in “Assigning a print parameter” on page 5 to assign a print parameter to a Get URL action on a button or frame.
- 2 Select the button or frame to which you assigned the Get URL action.
- 3 Choose Modify > Instance (button) or Modify > Frame (frame).
- 4 In the Instance Properties or Frame Properties dialog box, click the Actions tab.

- 5 After print: in the URL parameter field of the Get URL action, type the following:
#bframe
- 6 Click OK.

Printed results using #bframe

Flash movie dimension



1st frame properties labeled "#p"

Printed result Page 1



Flash movie dimension



2nd frame properties labeled "#p"

Printed result Page 2



Use #bframe to set the print area as the size of the bounding box of each frame.

Printing frames containing transparency or color effects

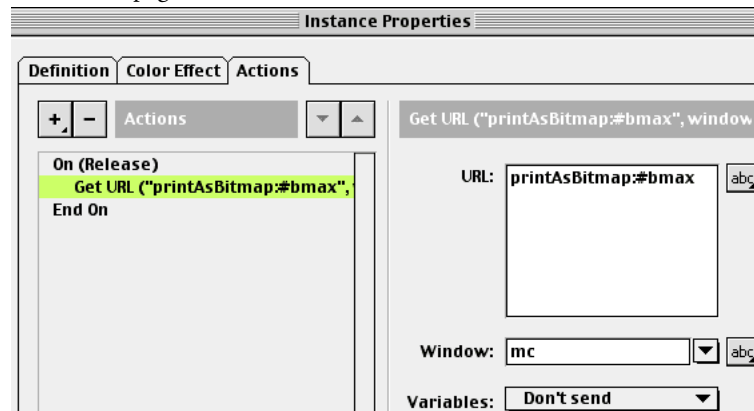
Objects containing transparency or color effects cannot be printed as vector data. (The alpha channel that defines the effect cannot be interpreted by the printer as vector data). To print frames that include objects containing transparency and color effects, use the `printAsBitmap` parameter. This allows objects with transparency and color effects to appear as intended on the printed page.

The `printAsBitmap` parameter prints at the highest available resolution of the printer. To calculate the printable file size of a frame designated to print as a bitmap, multiply pixel width by pixel height by printer resolution. Bitmaps are printed at 32-bits per pixel on the Macintosh, and 24-bits per pixel on Windows.

To assign the `printAsBitmap` parameter to a button:

- 1 Double-click the button, and select the Actions tab in the Instance Properties dialog box.
- 2 Click + (plus) and choose Get URL from the pop-up menu.
- 3 In the URL parameter field of the Get URL action, type the following:
`printAsBitmap:`
- 4 In the Get URL Window parameter field, specify the path to the main timeline, or to the instance name of a movie clip or loaded movie level (`_levelX`, where X is the level number) that contains the frames with transparency or color effect. Use Tell Target path syntax. For more information, see “How to Use the Tell Target Action” in the Flash Support Center (http://www.macromedia.com/support/flash/ts/documents/tell_target.htm).

- 5 To designate the print area, you can use either the #bmax or #bframe modifiers after the printAsBitmap parameter. Alternatively, you can use the #b label on a frame in the specified timeline. For more information, see “Specifying print area” on page 7.



To print frames with objects containing transparency or color effect, enter printAsBitmap: in the URL parameter field of the Get URL action. Enter the #bmax modifier to setup the print area as the composite bounding box of each frame.

- 6 Click OK.

You can also assign a Get URL action with a printAsBitmap parameter to a frame in a Flash movie. When the playback head reaches the designated frame, the Get URL action executes and a system Print dialog box appears.

To assign a Get URL action with a printAsBitmap parameter to a frame:

- 1 Double-click the frame, and select the Actions tab in the Frame Properties dialog box.
- 2 Repeat steps 2-6 above.

Publishing a movie with printable frames

You can publish to the Web a Flash movie with printable frames using any of the Flash HTML templates or by writing your own HTML code using the correct OBJECT and EMBED tag syntax. If users have Flash Player version 4.0.20 (Macintosh) or 4.0.25 (Windows), they will be able to print the designated frames in the Flash movie. If users do not have the appropriate Flash Player version, however, they will not be able to print, regardless of any print functionality you have added.

For this reason, you may want to set up a detection scheme that checks for Flash Player version 4.0.20 (Macintosh) or 4.0.25 (Windows), or later. The Flash banner ad example at the beginning of this article uses such a detection scheme. Download the source files and read the Read Me file from <http://www.macromedia.com/software/flash/open/webprinting/authoring.html> to understand how to set up Flash Player version detection using only Flash actions.

Other Support Resources

For further support, please read *Using Flash* or search the TechNotes and articles in the Flash Support Center.