



Power Mask

ABOUT THIS GUIDE

This User Guide is a reference for Power Mask made for Adobe Photoshop. You can read from start to finish or jump around as you please.

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July 15, 2009

About Us

Digital Film Tools brings together the unbeatable combination of superior software designers, motion picture visual effects veterans, video editors and photographers. Add three Emmy Awards and experience in creating visual effects for hundreds of feature films, commercials and television shows and you have a recipe for success. The understanding of photography, film and video editing, and in particular visual effects, allows us to design productive and highly specialized software. Software that is useful as well as easy to use. Our products stand up to the rigors of production and are the culmination of many years of experience.

Our philosophy is to bring our visual effects tools and techniques to the masses. What was once found only in expensive high-end packages or existed as proprietary in-house tools, is now available to photographers, artists, designers, and video/film editors. Did I mention affordable? Our software doesn't cost an arm and a leg and won't break the bank.

On-Line Help

Navigation

Previous / Next

Click on the Previous or Next icons to navigate through the help topics.



Show Navigation

If you enter any of the help pages through What's This?, you will not see the Table of Contents displayed on the left side of the screen. To display the Table of Contents, click on the Show Navigation icon at the top left of the screen.



Books

Click on a closed book to expand the topic.



Search

Click the Search tab, type in some text and click Go to find what you are looking for.



Blue Text

If you place your cursor over any text that is highlighted blue, it will turn into a hand. Click on the blue, hyperlinked text and it will navigate you to that portion of the manual.

Print

Click on the Print icon to print the currently displayed topic.



INSTALLATION

- 1** Download Power Mask at www.digitalfilmtools.com
- 2** Double-click on the file that was downloaded and run through the installation process.
- 3** When prompted, select your Adobe/Photoshop/Plug-Ins folder as the installation location.
- 4** Start Photoshop and load an image.
Power Mask can only be applied to a layer that contains a Layer Mask.
- 5** Double-click on the Background in the Layers Palette.
- 6** When the New Layer window opens, press OK.
Double-clicking on the Background in the Layers palette simultaneously converts it to a layer and unlocks it.
- 7** Press the Add Layer Mask icon at the bottom of the Layers palette.
A solid, white Layer Mask shows up to the right of the image. Photoshop uses the Layer Mask to place one image over another.
- 8** In the Layers palette, click on the layer's color image to select it (not the Layer Mask) before applying Power Mask.
The layer is now properly setup so Power Mask can be applied.
- 9** From the Filters pull-down menu, select Power Mask v1.0 from the Digital Film Tools group.
A dialog box pops up when you run Power Mask.
- 10** If you purchased the software, select Activate Power Mask and follow the instructions.
or
- 11** Select Request Trial Activation (Internet Required) and click Next to receive a fully functioning version of Power Mask for the specified trial period. At the end of the trial period, Power Mask reverts to a limited demo mode.
or
- 12** Select Run in Demo Mode and click Finish.
Note: Rendering is disabled in Demo Mode.

UNINSTALLING

Windows

- 1 Click the Windows Start Menu
- 2 Select Programs > Digital Film Tools > Power Mask Version > Uninstall Power Mask

Macintosh

Adobe Photoshop

- 1 Go to /Applications/Digital Film Tools
- 2 Remove the Power Mask v1 Photoshop folder
- 3 Go to /Applications/Adobe Photoshop (version)/Plug-Ins
- 4 Remove DFT Power Mask v1

ACTIVATING, DEACTIVATING AND TRANSFERRING LICENSES

Activation Options

Internet Activate (Recommended)

Activates Power Mask over the Internet.

Request License from Self-Service Website

If you do not have an Internet Connection on the computer where you want to run Power Mask, use this option. The self-service website will generate a license file which you can then transfer to the desired computer.

Telephone Activation

Allows you to activate Power Mask when you do not have access to the Internet at all.

Install a License File

Loads a license file obtained from the self-service website or received by email.

Note: If you experience an error when using Internet Activate, it is because you or your company uses a proxy server to access the Internet and/or your firewall is blocking our program's access to the Internet. For proxy server users, select Advanced Options and enter the appropriate proxy server settings. For firewall users, open your firewall software and allow our software to access the Internet.

Deactivation Options

Once Power Mask has been activated, you can access the Deactivation Options by selecting the License menu.

Internet Deactivate (Recommended)

Deactivates Power Mask over the Internet and is only available if you initially activated over the Internet. Use this method to return your Product Code back to the activation server. You will then be able to use your Product Code to activate Power Mask on another computer.

Remove License

Permanently removes the Power Mask license from your computer. You will no longer be able to activate Power Mask using the Product Code or license file that you originally activated with. Only use this option if instructed by customer support.

Note: Do not use Remove License to move the license to another computer.

To deactivate Power Mask:

- 1 Select License from the Help menu (? icon).**
- 2 Choose Internet Deactivate (Recommended) and click Next.**

License Transfer

Your Product Code allows you to run Power Mask on one computer at a time. However, you may transfer the license by deactivating on one computer and activating on another.

Internet Deactivate / Internet Activate is the preferred method of license transfer between computers, but is only available if you initially activated over the Internet and currently have Internet access. If you do not have Internet access, you will need to contact customer support to assist you in transferring the license.

To transfer a license:

- 1 Select License from the Help menu (? icon).**
- 2 Choose Internet Deactivate (Recommended) and click Next.**
Power Mask is now deactivated.
- 3 On the target computer, select Activate Power Mask and follow the instructions.**
Power Mask will then activate on the new computer.

POWER MASK - INTRODUCTION

Description

Power Mask is the first realtime, interactive tool capable of extracting almost any object in an image--even if you are dealing with fine hair detail, smoke, or reflections. As you simply paint along the edge of the object to be extracted, either the mask or the final composite can be revealed instantly. This extraction process creates what is known as a mask--essentially a black and white cutout. White mask areas are extracted, black areas not, and gray areas in between represent a level of transparency. Once a mask is extracted, the foreground object can be seamlessly composed onto a new background in Adobe Photoshop as well as apply filter and image corrections only within the area defined by the mask.

Original



User Input



To work this magic, Power Mask updates the mask or composite in real-time while you roughly paint a stroke along the boundary of the foreground object. Results show that compared with previous approaches, our method is more efficient and requires minimal effort to extract high quality masks for foregrounds with significant semi-transparent regions. In addition, the

foreground edge colors are estimated in the semi-transparent areas to create a seamless composite. Real-time, interactive masking is now a reality with Power Mask.

Background



Composite



TUTORIALS

Applying Power Mask

Using Power Mask with a Background and Foreground Image

Power Mask normally works with two images: a foreground and a background. Before applying Power Mask, you should place your foreground image in a layer above the background image and then apply a Layer Mask to the foreground layer. Photoshop uses the Layer Mask to place the foreground over the background. See the step by step instructions below on how to do this.

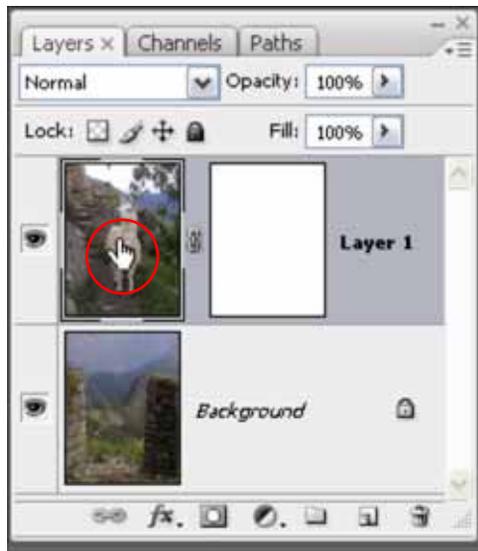
Note: When working with a multi-layer file, Power Mask must be applied to the top layer.

- 1 Load foreground and background images.
- 2 Click on the foreground image and press **Ctrl(Win)/Cmd(Mac)-A** to select it and **Ctrl(Win)/Cmd(Mac)-C** to copy it.
- 3 Click on the background image and press **Ctrl(Win)/Cmd(Mac)-V** to paste it.
- 4 Press the Add Layer Mask icon at the bottom of the Layers palette.



A solid, white Layer Mask shows up to the right of the foreground image.

- 5** In the Layers palette, click on the foreground layer's color image to select it (not the Layer Mask) before applying Power Mask.



The layers are now properly setup so Power Mask can be applied.

- 6** From the Filters pull-down menu, select Power Mask v1.0 from the Digital Film Tools group.

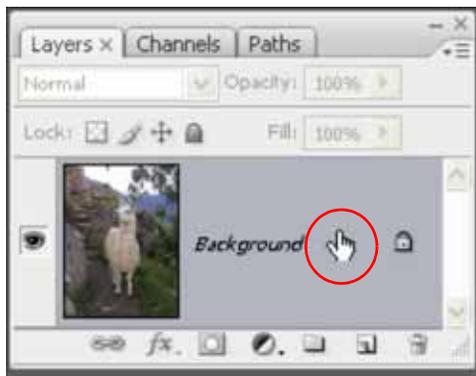
When you exit Power Mask, by default it overwrites both the color and mask portions of the foreground layer. This allows Photoshop to composite the foreground over the background.

Using Power Mask with a Single Image

Power Mask normally works with two images, but a single image can be used as long as it has a Layer Mask. When you load a single image in Photoshop, it shows up as a locked Background in the Layers palette. To add a Layer Mask, you will need to unlock the Background.

- 1** Load an image.

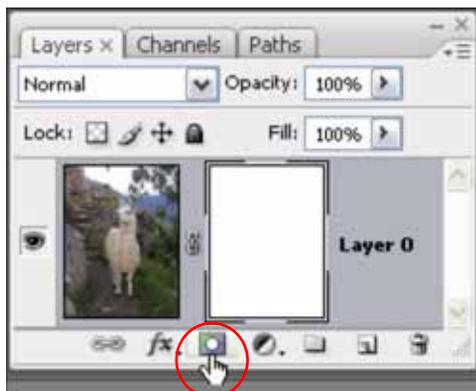
2 Double-click on the Background in the Layers Palette.



3 When the New Layer window opens, press OK.

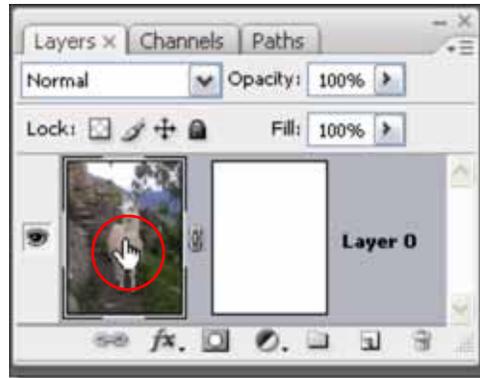
Double-clicking on the Background in the Layers palette simultaneously converts it to a layer and unlocks it.

4 Press the Add Layer Mask icon at the bottom of the Layers palette.



A solid, white Layer Mask shows up to the right of the image. Photoshop uses the Layer Mask to place one image over another.

- 5** In the Layers palette, click on the layer's color image to select it (not the Layer Mask) before applying Power Mask.



The layer is now properly setup so Power Mask can be applied.

- 6** From the Filters pull-down menu, select Power Mask v1.0 from the Digital Film Tools group.

When you exit Power Mask, by default it overwrites both the color and mask portions of the layer. For Photoshop to composite your result, you will need to load a background image and position it below your Power Mask processed layer.

Alpaca Tutorial

Power Mask creates masks by painting a trimap--a segmented image consisting of three regions of foreground (what you want to cut out), background and unknown. Partial opacity values are then computed only for pixels inside the unknown region.

The beauty of Power Mask is that you can create a small trimap using the combination Paint FG/BG/Unknown brush. Clockwise strokes made with this brush defines a trimap, with the outside edge of the stroke assumed to lie in the background (colored red), the inside edge assumed to lie in the foreground (colored green), and the middle of the stroke unknown (colored gray). Power Mask then automatically reveals a local region of the final mask or composite, depending on your View setting, in the area of the brush stroke. How cool is that? Once the unknown areas have been specified using the Paint FG/BG/Unknown brush, you can automatically fill in the rest of the trimap.

Foreground



Trimap



- 1 Go to www.digitalfilmtools.com and download the tutorial images.

- 2 Start Photoshop and load the *alpaca.jpg* foreground and *alpaca_bg.jpg* background image.

Foreground



Background



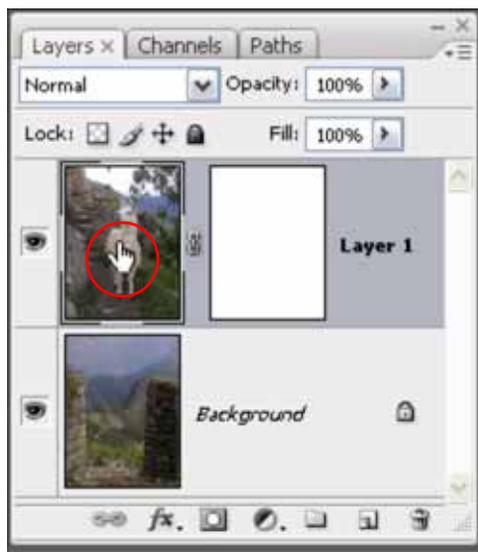
Place the Alpaca foreground on a layer above the Alpaca background.

- 3 Click on the alpaca image and press **Ctrl(Win)/Cmd(Mac)-A** to select it and **Ctrl(Win)/Cmd(Mac)-C** to copy it.
- 4 Click on the alpaca_bg image and press **Ctrl(Win)/Cmd(Mac)-V** to paste it.
- 5 Press the **Add Layer Mask** icon at the bottom of the Layers palette.



A solid, white Layer Mask shows up to the right of the Alpaca foreground image. Photoshop uses the Layer Mask to place the foreground over the background.

- 6 In the Layers palette, click on the foreground layer's color image to select it (not the Layer Mask) before applying Power Mask.



The layers are now properly setup so Power Mask can be applied.

Note: When working with a multi-layer file, Power Mask must be applied to the top layer.

- 7 From the Filters pull-down menu, select Power Mask v1.0 from the Digital Film Tools group.

Although the image can be zoomed in or out or fitted to the window, the image opens at a 1:1 pixel ratio or 100%.



This is the most accurate way to work with the image when creating a mask. If at any time you would like to see the entire image in the Viewer, select the Zoom to Fit icon.



- 8 To pan the Alpaca's head into view, press the Space bar while clicking and dragging with the left mouse button.

To start the masking process, the best method is to draw clockwise around the object that you would like to cut out with as small a brush as possible. By doing so, you are defining unknown areas. Unknown areas are typically areas where the foreground is transitioning to the background. In this case, the hairy edges of the Alpaca would be considered unknown areas.

- 9 By default, the Paint FG/BG/Unknown brush is selected and is the top icon in the Brush toolbar located on the left side of the screen. Make sure that it is selected by clicking on it.**



Paint FG/BG/Unknown is the most common unknown brush where background and foreground are placed on opposite sides of the center unknown area to automatically create a trimap.

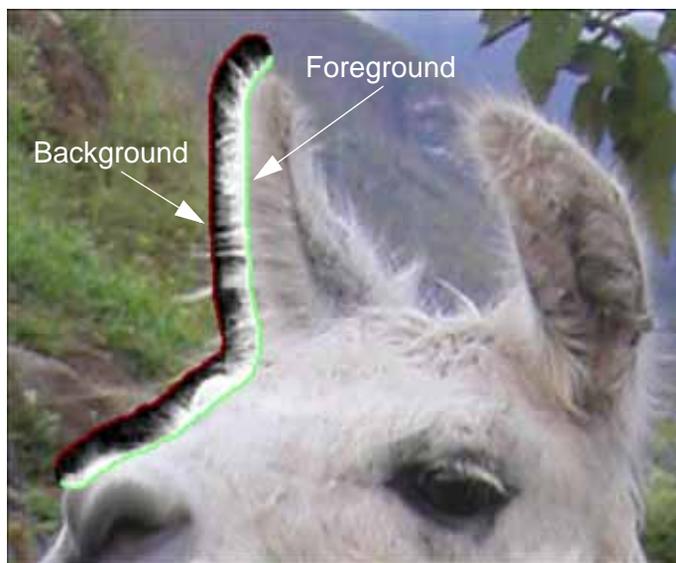
- 10 Starting at the nose and ending at the top of the ear, draw a small section along the edge of the Alpaca in a clockwise direction with the left mouse button. As you draw, the mask will render in the area of the brush stroke.**

If there are some hairs sticking out beyond the size of the brush, don't worry, you will take care of those in a minute.



Painting clockwise always places foreground to the inside of the cursor with the background on the outside. Painting counterclockwise does the opposite and places foreground on the outside and background to the inside of the cursor. We recommend painting clockwise around the foreground object to be extracted. If the foreground object has an interior hole, you should paint counterclockwise inside of the edge of the hole so as to place the foreground to the outside of the cursor.

- 11 Select the Show Paint icon to display the paint overlay in the Mask and Composite views.**



The Show Paint icon controls whether or not the foreground and background colors are superimposed over the Mask and Composite views. When activated, a green and red border appears around the stroke. Green symbolizes foreground while red means background. This will help you in seeing the orientation of the foreground and background in relation to unknown areas.

- 12 Select the Paint BG/Unknown brush to cover the hairs that extend into the background beyond the width of the brush stroke.



- 13 Select the Paint FG/BG/Unknown brush using the 1 shortcut key.



- 14 Completely draw around the edges of the Alpaca being careful to cover as little solid foreground areas as possible, but include as much of the hair that is sticking out. You can do this by interactively making the brush size smaller or larger while drawing by using the Up and Down arrow keys.

Ideally, the unknown trimap region that you are drawing should only cover transparent pixels whose actual values are not solid foreground or background. In other words, the unknown region in the trimap should be as thin as possible to achieve the best masking result. Using too large of a brush can impact performance.

- 15 At a 1:1 zoom ratio, you will need to pan the image around in the window. Press the Space Bar while clicking and dragging to pan the image.

While drawing, if a section of the mask appears entirely black, just trace over it again.



- 16** Switch to View Trimap to see the foreground, background and unknown colors mixed on top of the foreground.



The Trimap view will make it easier to see where you need to adjust your paint strokes. Since the background and foreground areas are not filled in yet, they are represented by the red and green border around the unknown area.

- 17** Use the Brush Opacity if you would like to control the amount of trimap mixed over the image.



If you are like me, you may have been a little sloppy when tracing around the Alpaca.

- 18 Quickly toggle between the Foreground and Trimap views using the F2 and F6 keys.**

This can be helpful in identifying areas that need adjustment.

- 19 If you see any areas of the stroke that missed the solid foreground area of the Alpaca, fill them in with the Paint FG/Unknown brush.**



Before



After



- 20 Fill all areas of the stroke that missed any Alpaca hairs extending into the background beyond the width of the brush stroke with the Paint BG/Unknown brush.**



Before



After



- 21** Check for any areas where there may be small areas of background color in the foreground border or vice-versa. This can sometimes happen when rounding tight corners and will result in a small hole in the mask if not repaired. You can fix this by drawing over the area with the Paint FG/BG/Unknown brush in a clockwise direction.



Before



After



Once the Alpaca has been surrounded using the Paint FG/BG/Unknown brushes, you are ready to auto fill the trimap.

22 Select the Auto Fill icon.

Foreground



Trimap



Auto Fill automatically fills in both foreground and background areas.

23 Switch to Mask view.

Since the Show Paint icon is still activated, the foreground and background colors are superimposed over the mask. It is a bit annoying now, so deactivate it.

24 Click the Show Paint icon to deactivate it.**25 Use either the left and right arrow keys or the F2, F4 and F5 keys to quickly compare the Foreground, Mask and Composite views.**

This will help you identify any areas in the Mask that need to be adjusted.

Here are few tips on creating a high quality mask:

- Where there is solid background, the mask should be completely black.
- Where there is solid foreground, the mask should be completely white.

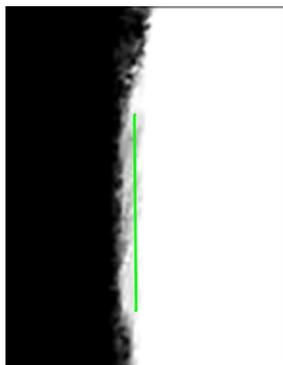
- Where there are transparent or unknown areas, the mask should have gray values.

Note: In the next three steps, your results will most likely differ than the screen shots shown below as the state of the mask is totally dependent on where the brushes were applied.

- 26** If you see gray areas in the foreground object that should be completely white, make additional paint strokes using the Paint Foreground brush in those areas.



Before



After



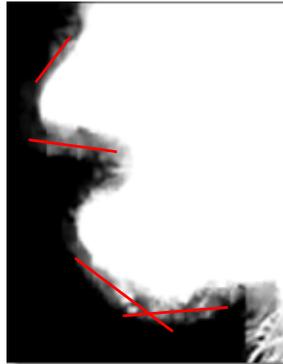
Once the stroke is drawn, the area is re-rendered. You can tell when Power Mask is rendering by the spinning, green gear at the bottom right of the frame.



- 27** If you see gray areas in the background that should be completely black, make additional paint strokes using the Paint Background brush in those areas.



Before



After



- 28** If there are areas that should be marked as unknown, such as areas of missing Alpaca hair, make additional paint strokes with the Touch-up Unknown brush in those areas.



Before



After



- 29** Select the View Composite icon to see the foreground composited over the background based on the generated mask.



30 Press Zoom to Fit icon to see the entire image in the Viewer.



I know, I know. The Alpaca is too high in the frame. You will move it down in Photoshop in a moment.



Once you are happy with the mask that is generated and if the composite looks good, exit Power Mask.

Note: Make sure that you are happy with the result before pressing Done, as you can't reenter Power Mask and pick up where you left off.

31 Click Done to return to Photoshop.



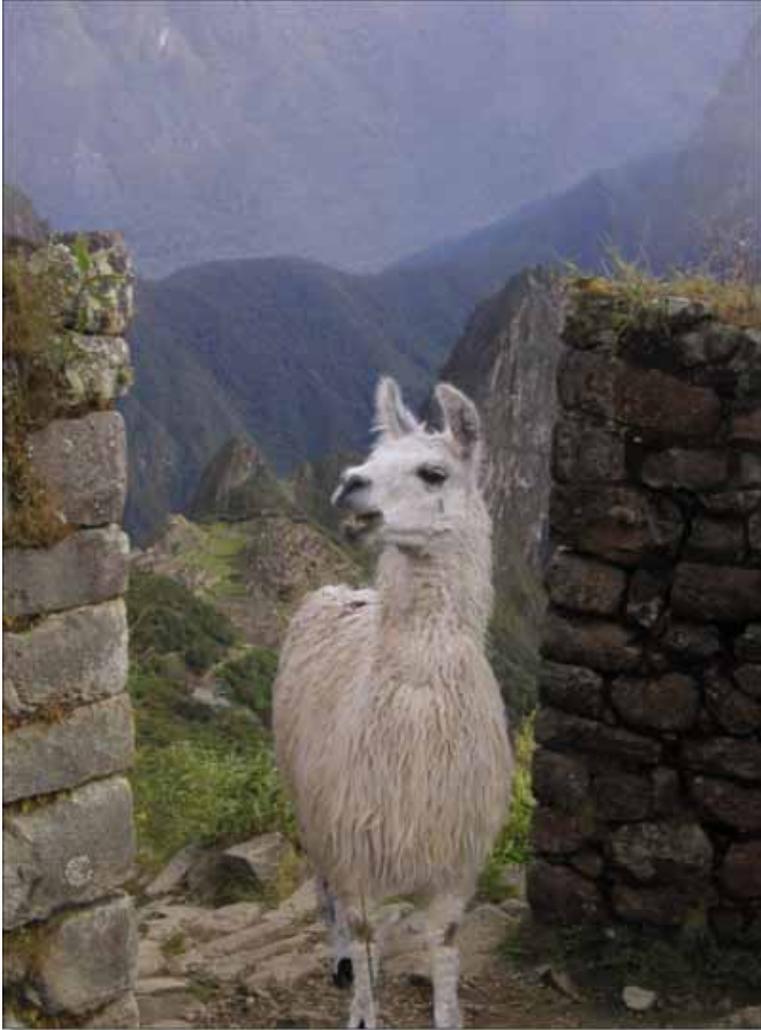
Power Mask overwrites the foreground layer in addition to rendering a mask into the Layer Mask. This results in the Alpaca foreground being composited over the Alpaca background layer.

32 If you are not happy with your results, press Ctrl(Win)/Cmd(Mac)-Z to Undo Power Mask and try again.

33 To finish up, select the Move tool in Photoshop.



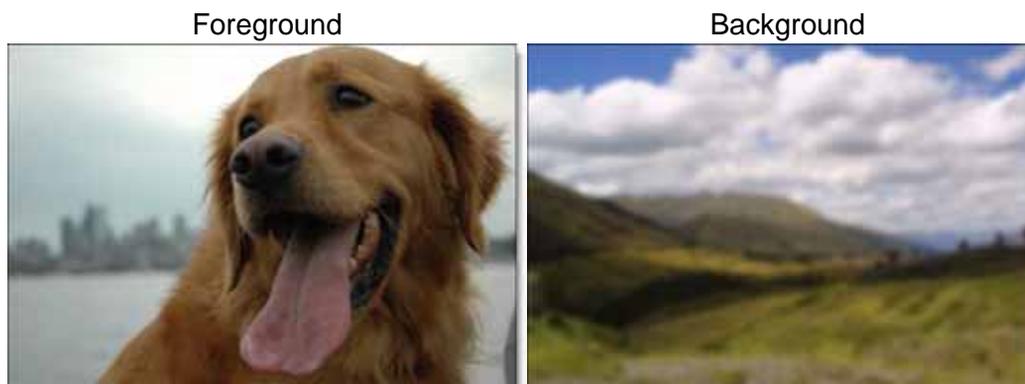
34 Click and drag the Alpaca down in the frame for a better composition.



Dog Tutorial

This tutorial is dedicated to the Auto Paint brush which automatically chooses from the six available brush types. Your goal will be to create a mask without using any other brush. Make sure that you complete the previous Alpaca tutorial so that you are familiar with the different brush types before proceeding.

- 1 Go to www.digitalfilmtools.com and download the tutorial images.
- 2 Start Photoshop and load the *dog.jpg* foreground and *dog_bg.jpg* background image.



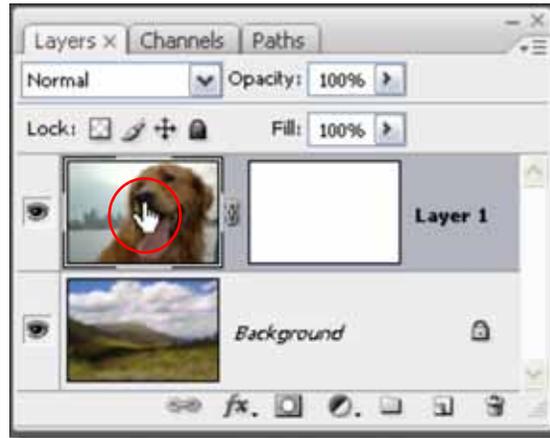
Place the Dog foreground on a layer above the Dog background.

- 3 Click on the dog image and press **Ctrl(Win)/Cmd(Mac)-A** to select it and **Ctrl(Win)/Cmd(Mac)-C** to copy it.
- 4 Click on the *dog_bg* image and press **Ctrl(Win)/Cmd(Mac)-V** to paste it.
- 5 Press the Add Layer Mask icon at the bottom of the Layers palette.



A solid, white Layer Mask shows up to the right of the Dog foreground image. Photoshop uses the Layer Mask to place the foreground over the background.

- 6 In the Layers palette, click on the foreground layer's color image to select it (not the Layer Mask) before applying Power Mask.



The layers are now properly setup so Power Mask can be applied.

Note: When working with a multi-layer file, Power Mask must be applied to the top layer.

- 7 From the Filters pull-down menu, select Power Mask v1.0 from the Digital Film Tools group.

The image opens at a 1:1 pixel ratio or 100%.



- 8 Click the Zoom to Fit icon to show the entire image in the Viewer.



To start the masking process, the best method is to draw clockwise around the object that you would like to cut out with as small a brush as possible. By doing so, you are defining unknown areas. Unknown areas are typically areas where the foreground is transitioning to the background. In this case, the hairy edges of the Dog would be considered unknown areas.

9 Select the Auto Paint icon in the Toolbar.



Auto Paint automatically chooses from the six available brush types. Depending on where you are painting and the location of the cursor, the proper brush is selected and the cursor changes color and/or thickness to reflect the state of the brush. Paint FG/BG/Unknown is the default Auto Paint brush and is the most common unknown brush where background and foreground are placed on opposite sides of the center unknown area to automatically create a trimap.

10 Starting at the bottom left of the Dog and using the default brush size, draw a stroke in a clockwise direction along the edge of the Dog with the left mouse button. As you draw, the mask will render in the area of the brush stroke.



11 Stop where the Dog's hair sticks out.

Painting clockwise always places foreground to the inside of the cursor with the background on the outside. Painting counterclockwise does the opposite and places foreground on the outside and background to the inside of the cursor. We recommend painting clockwise around the foreground object to be extracted. If the foreground object has an interior hole, you should paint counterclockwise inside of the edge of the hole so as to place the foreground to the outside of the cursor.

- 12 Click on the Brush Size icon in the Toolbar and set the brush to a value of 40.



Note: Since the state of the Auto Paint brush changes based on the cursor location, it is important to look at the cursor color before drawing to make sure that you are painting with the desired brush.

- 13 Before you pick up where you left off, make sure that the paint cursor is red on one side and green on the other before starting to paint.



Note: In Auto Paint, pressing and holding **Ctrl**(Win)/**Cmd**(Mac) forces Paint FG/BG/Unknown brush on at all times regardless of the cursor position.

- 14 Continue drawing clockwise around the Dog being careful to cover as little solid foreground areas as possible until the Dog is completely outlined.

It is better to have a smaller brush and let some of the Dog's hairs stick out beyond the size of the brush while painting the mask. These stray hairs are easily fixed later. Ideally, the unknown trimap region that you are drawing should only cover transparent pixels whose actual values are not solid

foreground or background. In other words, the unknown region in the trimap should be as thin as possible to achieve the best masking result. Using too large of a brush can impact performance.



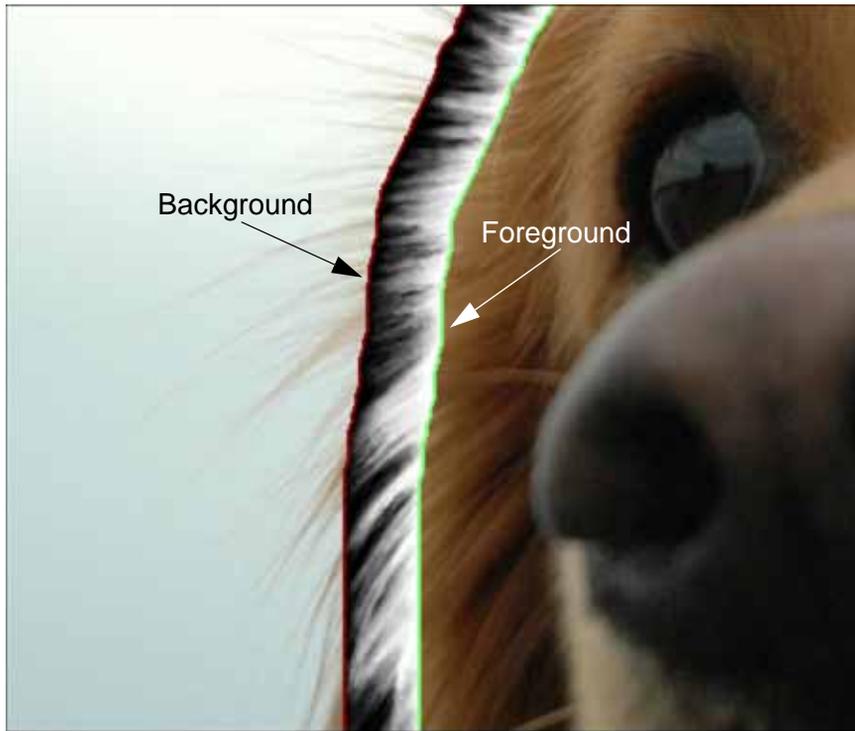
While drawing, if a section of the mask appears entirely black, just trace over it again.

- 15** Select the 1:1 icon above the Viewer to see the image at 100%.



- 16** Press the Space bar while clicking and dragging with the left mouse button to pan the Dog's right eye and nose into view.

- 17 Select the Show Paint icon to display the paint overlay in the Mask and Composite views.

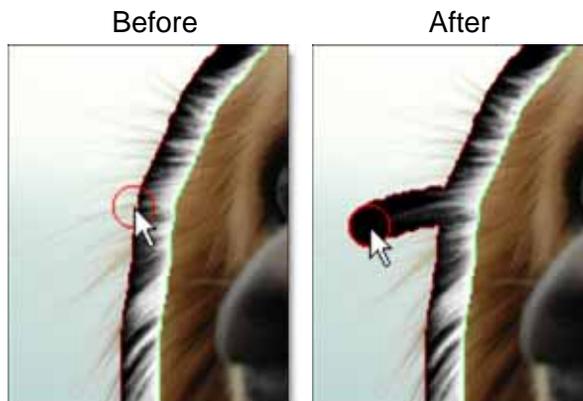


The Show Paint icon controls whether or not the foreground and background colors are superimposed over the Mask and Composite views. When activated, a green and red border appears around the stroke. Green symbolizes foreground while red means background. This will help you in seeing the orientation of the foreground and background in relation to unknown areas.

- 18 Click on the Brush Size icon in the Toolbar and set the brush to a value of 20.



- 19** To cover the hairs that extend into the background beyond the width of the brush stroke, place the cursor over the outside edge of the stroke so that the cursor turns completely red and then paint outward to cover the hairs.



Placing the cursor over the outside edge of the stroke selects Paint BG/Unknown. The paint cursor becomes red with a thin outline.

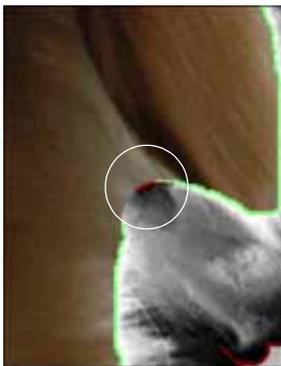
- 20** Repeat the previous step until all hairs extending beyond the width of the brush are covered.
- 21** As you draw at a 1:1 zoom ratio, you will need to pan the image around in the Viewer. Press the Space Bar plus clicking and dragging to pan the image. As you draw each stroke, the area is re-rendered. You can tell when Power Mask is rendering by the spinning, green gear at the bottom right of the frame.



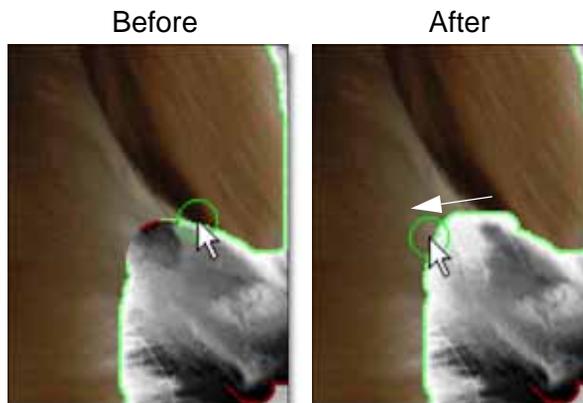
When done, your mask should look something like this:



- 22** Check for any areas where there may be small areas of background color in the foreground border or vice/versa. This can sometimes happen when rounding tight corners and will result in a small hole in the mask if not repaired.



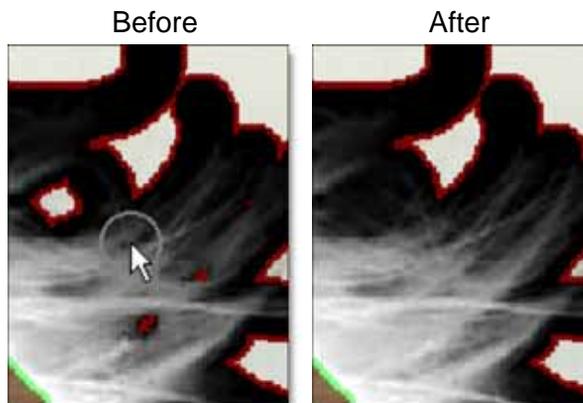
- 23** You can fix this by placing the cursor over the inside edge of the stroke so that the cursor turns completely green and then paint to cover the problem area.



Placing the cursor over the inside edge of the stroke selects Paint FG/Unknown. The paint cursor becomes green with a thin outline

Ok, next clean up any residual spots of background within the unknown area that should have been painted as unknown to start with.

- 24** Press and hold the **Shift** key in an area of unknown so that the cursor turns completely gray and paint over any unneeded background spots.



Holding Shift and placing the cursor over unknown areas selects Touch-up Unknown. The paint cursor becomes gray with a thick outline.

- 25** Switch to View Trimap to see the foreground, background and unknown colors mixed on top of the foreground.



The Trimap view will make it easier to see where you need to adjust your paint strokes. Since the background and foreground areas are not filled in yet, they are represented by the red and green border around the unknown area.

- 26 Use the Brush Opacity** if you would like to control the amount of trimap mixed over the image.



- 27 Quickly toggling between the Foreground and Trimap views using the F2 and F6 keys** can be helpful in identifying areas that need adjustment.

- 28 Paint as needed to make sure the hairs extending away from the Dog are covered by unknown area** surrounded by either background or foreground.

You are now ready to auto fill the trimap.

- 29 Select the Auto Fill icon.**



Foreground



Trimap



Auto Fill automatically fills in both foreground and background areas.

- 30 Switch to Mask view.**



Since the Show Paint icon is still activated, the foreground and background colors are superimposed over the mask. It is hard to see what's going on in the mask, so deactivate Show Paint.

- 31** Click the Show Paint icon to deactivate it.



- 32** Use either the left and right arrow keys or the F2, F4 and F5 keys to quickly compare the Foreground, Mask and Composite views.

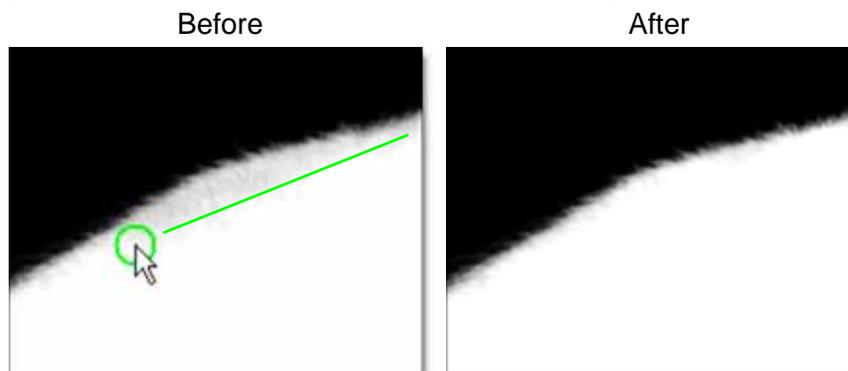
This will help you identify any areas in the Mask that need to be adjusted.

Here are few tips on creating a high quality mask:

- Where there is solid background, the mask should be completely black.
- Where there is solid foreground, the mask should be completely white.
- Where there are transparent or unknown areas, the mask should have gray values.

Note: In the following steps, your results will most likely differ than the screen shots shown below as the state of the mask is totally dependent on where the brushes were applied.

- 33** If you see gray areas in the foreground object that should be completely white, press Shift over a portion of solid white foreground and the cursor changes to a thick green outline. While keeping the Shift key depressed move the cursor to the gray area where you want to paint and click and drag with the left mouse button.



Pressing Shift over solid white foreground selects Paint Foreground. The paint cursor becomes green with a thick outline. Once the stroke is drawn, the area is re-rendered as solid foreground.

- 34** If you see gray areas in the background that should be completely black, press Shift over a portion of solid black background and the cursor will change to a thick red outline. While keeping the Shift key depressed move the cursor to the gray area where you want to paint and click and drag with the left mouse button.

Pressing Shift over solid black background selects Paint Background. The paint cursor becomes red with a thick outline. Once the stroke is drawn, the area is re-rendered as solid background.

- 35 Select the View Composite icon to see the foreground composited over the background based on the generated mask.**



- 36 Press Zoom to Fit icon to see the entire image in the Viewer.**

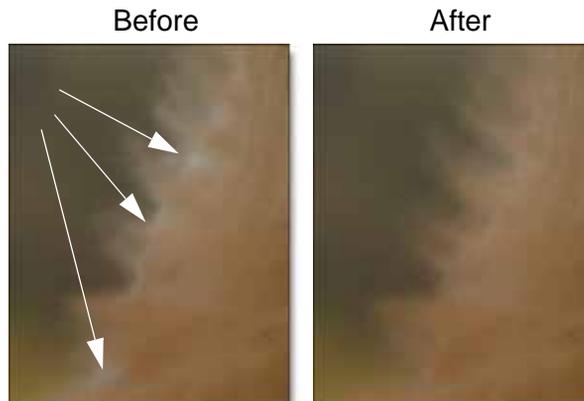


If you have any edge areas that are pulling in white areas from the sky, they can be fixed by painting over the offending edges. These bright edge areas can occur with the Dog if your foreground strokes are too close to the edge of the hair.

- 37 Set the Brush Size to a value of 40.**
- 38 Press Ctrl(Win)/Cmd(Mac) to force Auto Paint to use the Paint FG/BG/Unknown brush regardless of the cursor position and paint along the bright edge.**
- or
- 39 Press and hold the Shift key while hovering over the edge so that the cursor turns completely gray and then paint along the bright edge. This selects the Touch-up Unknown brush.**

You may have to move the cursor back and forth over the edge while pressing **Shift** until Auto Paint finds some unknown area before the cursor turns gray.

- 40 Do this again for any other bright edges.**



Once you are happy with the mask that is generated and if the composite looks good, exit Power Mask.

Note: Make sure that you are happy with the result before pressing Done, as you can't reenter Power Mask and pick up where you left off.

41 Click Done to return to Photoshop.



Power Mask overwrites the foreground layer in addition to rendering a mask into the Layer Mask. This results in the Dog foreground being composited over the Dog background layer.



42 If you are not happy with your results, press Ctrl(Win)/Cmd(Mac)-Z to Undo Power Mask and try again.

POWER MASK - OVERVIEW

User Interface

The Power Mask user interface consists of brushes and their controls located in a vertical toolbar on the left side of the screen with viewer, processing and general controls across the top.



Mask Creation

Trimaps

Power Mask creates masks by painting a trimap--a segmented image consisting of three regions of foreground (what you want to cut out), background and unknown. Partial opacity values are then computed only for pixels inside the unknown region.

The beauty of Power Mask is that you can create a small trimap using the combination Paint FG/BG/Unknown brush. Clockwise strokes made with this brush defines a trimap, with the outside edge of the stroke assumed to lie in the background (colored red), the inside edge assumed to lie in the foreground (colored green), and the middle of the stroke unknown (colored gray). Power Mask then automatically reveals a local region of the final mask or composite, depending on your View setting, in the area of the brush stroke. How cool is that?



Once the unknown areas have been specified using the Paint FG/BG/Unknown brush, you can automatically fill in the rest of the trimap.

Trimap



Mask



Trimap Creation Tips & Tricks

- **First, define unknown areas by selecting the Paint FG/BG/Unknown brush and drawing around the edges of the foreground (what you want to cut out) with the left mouse button. Include as little solid foreground areas as possible.**
- **Use the Paint BG/Unknown brush to cover foreground details like hair, for instance, that extend into the background.**
- **Ideally, the unknown region in the trimap should only cover transparent pixels whose actual values are not solid foreground or background. In other words, the unknown region in the trimap should be as thin as possible to achieve the best masking result.**
- **Once you have surrounded the foreground object with the Paint FG/BG/Unknown brush, click the Auto Fill brush to automatically fill in the solid foreground and background areas.**
- **Select View Trimap and use the Paint Foreground, Paint Background and Touch-up Unknown brushes to modify the trimap as needed.**

Brushes

The first three brushes paint with unknown surrounded by boundaries of foreground (green), background (red) or both foreground and background.

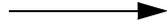
Paint FG/BG/Unknown



Paint FG/Unknown



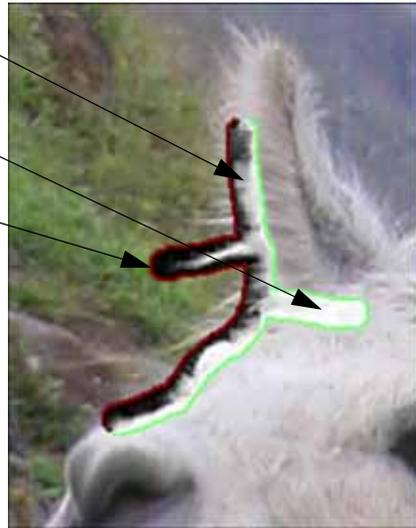
Paint BG/Unknown



Paint FG/BG/Unknown

Paint FG/Unknown

Paint BG/Unknown



Paint FG/BG/Unknown

Paint FG/BG/Unknown is the most common unknown brush where background and foreground are placed on opposite sides of the center unknown area to automatically create a trimap. The orientation of the foreground and background portions of the brush automatically rotate to follow the direction of the foreground object to be extracted.



Painting clockwise always places foreground to the inside of the cursor with the background on the outside. Painting counterclockwise does the opposite and places foreground on the outside and background to the inside of the cursor. Whichever direction you draw, make sure that the foreground (green) side of the paint cursor is on the same side as your foreground object.

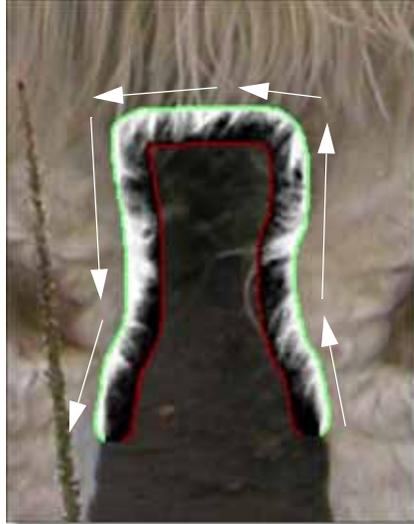
Note: You must move the mouse slightly in the direction that you are painting for the brush to properly orient the Foreground and Background positions.

We recommend painting clockwise around the foreground object to be extracted. If the foreground object has an interior hole, you should paint counterclockwise inside of the edge of the hole so as to place the foreground to the outside of the cursor.

Clockwise

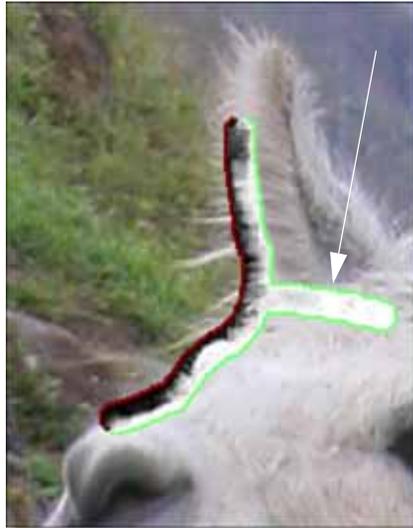


Counterclockwise



Paint FG Unknown

Paint FG/Unknown marks both sides of the unknown area as foreground.



Paint BG Unknown

Paint BG/Unknown marks both sides of the unknown area as background. This brush is useful for covering foreground details like hair, for instance, that extend into the background.



Paint Foreground

Paints solid foreground.



Paint Background

Paints solid background.



Touch-up Unknown

Paints solid unknown. The Touch-up Unknown brush should only be used when painting areas where foreground, background or unknown regions already exist.



Eraser

Erases existing brush strokes.



Note: You can quickly erase other strokes without selecting the Eraser brush by painting with the right-mouse button. This temporarily draws with the Eraser and when the right-mouse button is released, the previously selected brush becomes active.

Fill

The Fill brush fills an enclosed region defined by a brush stroke or an area of solid color. To use this tool, select the Paint Foreground or Paint Background brush, select Fill and click on the area of the screen that you want to fill.



Auto Paint

Auto Paint automatically chooses from the six available brush types. Depending on where you are painting and the location of the cursor, the proper brush is selected and the cursor changes color and/or thickness to reflect the state of the brush.



Since the state of the Auto Paint brush changes based on the cursor location, it is important to look at the cursor color before drawing to make sure that you are painting with the desired brush.

Auto Paint Brushes

Paint FG/BG/Unknown

Paint FG/BG/Unknown is the default Auto Paint brush when the cursor is not over any other strokes and is also selected when the cursor is placed over any existing Paint FG/BG/Unknown stroke. The paint cursor is half red and half green. Pressing and holding **Ctrl**(Win)/**Cmd**(Mac) forces Paint FG/BG/Unknown brush on at all times regardless of the cursor position.



Paint FG/Unknown

Once a Paint FG/BG/Unknown stroke is painted, placing the cursor over the inside edge of the stroke selects Paint FG/Unknown. The paint cursor is green with a thin outline.



Paint BG/Unknown

Once a Paint FG/BG/Unknown stroke is painted, placing the cursor over the outside edge of the stroke selects Paint BG/Unknown. The paint cursor is red with a thin outline.



Paint Foreground and Paint Background

- Once the trimap has been filled, placing the cursor over complete foreground or background areas causes the paint cursor to become thicker and automatically selects Paint Foreground (green paint cursor) or Paint Background (red paint cursor) brushes respectively.

Paint Foreground



Paint Background



- With only a Paint FG/BG/Unknown stroke drawn, you can paint solid foreground or background without selecting those brushes by pressing **Shift** and hovering over the inside or outside edge of the stroke. When the paint cursor turns a thick green (Paint Foreground) or red (Paint Background), click and drag to paint with that brush.

Paint Foreground

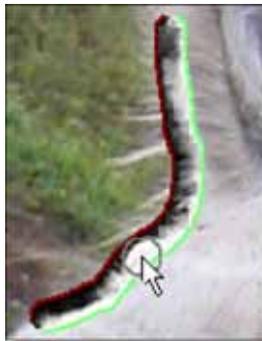


Paint Background



- Hovering over an unknown area while pressing **Shift** will force the cursor to the unknown gray color. Click and drag to then paint unknown areas.

Paint Unknown

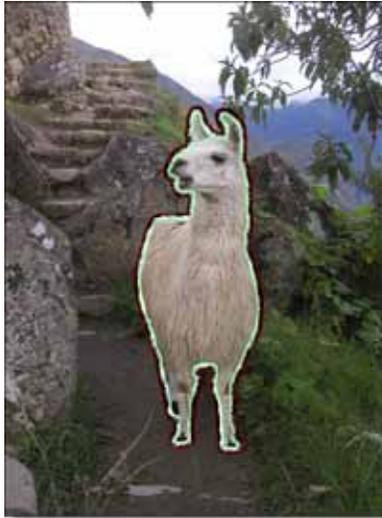


Auto Fill

Once the foreground object to be extracted has been surrounded using the Paint FG/BG/Unknown brush, selecting Auto Fill will automatically fill in both foreground and background areas.



Before Auto Fill



Trimap After Auto Fill



Mask After Auto Fill



Brush Parameters

Brush Size

Sets the size of the brush.



Brush Opacity

Sets the opacity of the brush.



Brush Keyboard Shortcuts

| <u>Shortcut</u> | <u>Action</u> |
|---|---|
| 1 | Selects the Paint FG/BG/Unknown brush |
| 2 | Selects the Paint FG/Unknown brush |
| 3 | Selects the Paint BG/Unknown brush |
| 4 | Selects Auto Paint |
| Auto Paint+ Ctrl (Win)/ Cmd (Mac) | Forces the Paint FG/BG/Unknown brush on |
| Auto Paint+ Shift | Selects Paint Foreground, Paint Background or Touch-up Unknown when the cursor is over Foreground, Background or Unknown colors |
| F | Selects the Paint Foreground brush |
| B | Selects the Paint Background brush |
| U | Selects the Touch-up Unknown brush |
| Shift-F | Selects the Auto Fill tool |
| Ctrl (Win)/ Cmd (Mac)- F | Selects the Fill tool |
| E | Selects the Eraser brush |
| Right-mouse drag | Temporarily draws with the Eraser brush |
| Up and Down Arrow Keys | Sets the size of the current brush |

Power Mask Processing Options

Edge Color Estimation

Estimates the color of the foreground in unknown and semi-transparent areas. Edge Color Estimation is on by default and prevents fringing to create a seamless composite. When disabled, a foreground object with transparent edges against a bright or dark background will have bright or dark edges in the composite.



Off



On



Note: If you wish to touch up the mask in Photoshop, you will want to turn Edge Color Estimation off.

Blue/Green Spill Suppression

When a foreground object has been photographed against a solid blue or green backdrop, the blue or green color can have a tendency to spill onto the foreground object. When extracting an object photographed against one of these colors, you may find it necessary to remove the blue or green spill. This is a process called Spill Suppression.



Off



On



Note: You view the composite to see the results of the color suppression.

Color

Selects whether blue or green is suppressed from the foreground image.

Amount

Suppresses color spill in the foreground. The default value of 100 should be sufficient for most situations.

Range

Increases the range of areas that are color suppressed. If color spill is still evident, increase this value.

Edge

Suppresses the color spill of the unknown edge areas to the color gray. This is useful for edges that contain a lot of neutral transparency like glass reflections.

Done

Exits Power Mask and transfers the processed mask and foreground to Photoshop. Make sure that you are happy with the result before pressing Done, as you can't reenter Power Mask and pick up where you left off.



Views

Chooses what to display in the Viewer.

Foreground

Displays the Foreground image.



Background

Displays the Background image.



Mask

Displays the generated mask.



Composite

Displays the foreground composited over the background based on the generated mask. If a background layer was not present at the time Power Mask was applied, the foreground is placed over a solid color.



Trimap

Displays the trimap overlayed on top of the foreground image.

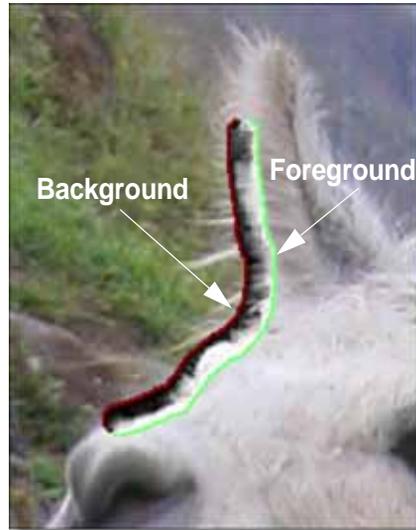


Use the Brush Opacity to control the amount of trimap mixed over the image.



Show Paint

Turns the paint overlay on and off for the Mask and Composite views. Off by default, Show Paint is useful for painting using the Paint FG/BG/Unknown brush so that you can see the foreground (green) and background (red) borders surrounding the unknown area.



View Keyboard Shortcuts

| <u>Shortcut</u> | <u>Action</u> |
|-------------------------|-----------------------------------|
| F2 | Selects the Foreground view |
| F3 | Selects the Background view |
| F4 | Selects the Mask view |
| F5 | Selects the Composite view |
| F6 | Selects the Trimap view |
| Left / Right Arrow Keys | Cycles through the selected views |

Viewer Controls

At the top of the Power Mask Viewer, there are various controls.

1:1

Makes the image in the Viewer a 1:1 zoom ratio and shows the actual pixels of the image. The 1:1 setting accurately represents what the filter will look like when applied to the full size image.



Zoom In

Zooms into the image.



Zoom Level

Displays the zoom level as a percentage.



Zoom Out

Zooms the image out.



Zoom to Fit

Fits the image to the Power Mask window.



Zoom Region

Select the Zoom Region icon and drag select a square region in the Viewer to zoom in on that area.



Pan

Pans the image when the Viewer is zoomed in.



Note: Panning is only available when a portion of the image is cut off by the Viewer window.

Zoom Keyboard Shortcuts

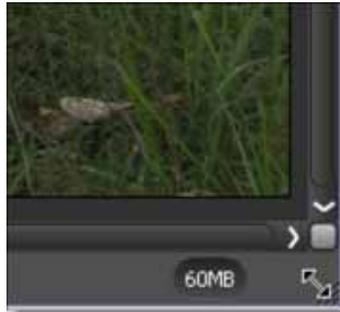
| Shortcut | Action |
|---------------------------|--------------------------------------|
| I Key | Zooms the image in |
| O Key | Zooms the image out |
| Scroll wheel over image | Zooms the image in and out |
| Space Bar-drag | Pans the image |
| Middle-mouse drag | Pans the image |
| Middle-mouse double click | Fits the image in the Viewer |
| H | Sets the Viewer to a 1:1 pixel ratio |

General Controls

The Power Mask window has a number of general controls.

Size Window

Change the size of the Power Mask window by dragging the bottom right corner.



Tool Tips

Hovering the cursor over an icon will display its function in the Status Bar located at the lower left corner of the interface.

Help

Opens the Help menu.



Power Mask Help

Opens Power Mask On-Line Help.

What's this?

Select What's This and then click on a toolbar icon that you want help with.

Help Keyboard Shortcuts

| <u>Shortcut</u> | <u>Action</u> |
|-----------------|-------------------------------|
| F1 | Opens Power Mask On-Line Help |
| Shift-F1 | Opens What's This? help |

Undo, Redo, Reset

Undo

Successively undoes operations.



Redo

Successively redoes operations.



Reset

Resets Power Mask.



Undo / Redo Keyboard Shortcuts

| <u>Shortcut</u> | <u>Action</u> |
|----------------------|---------------|
| Ctrl(Win)/Cmd(Mac)-Z | Undo |
| Ctrl(Win)/Cmd(Mac)-Y | Redo |

Settings

Various Power Mask preferences can be set by clicking the Settings icon.



Brush Color

Foreground Color

Sets the color of the Foreground brush.

Background Color

Sets the color of the Background brush.

Unknown Color

Sets the color of the Unknown brush.

Background Color

When viewing the Composite, this sets the background color. This feature is only available if Power Mask is applied to a single image.

Spill Suppression Options

Opens the Spill Suppression parameter window if it has been closed.