

QuickStitch Frequently Asked Questions

Enroute Imaging

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My panorama doesn't look very good. BRIEFLY, what can I do about it?

- If objects in your panorama are blurry, try using Sharp blending.
- If the exposure looks different between matching images, try using Gradual blending.
- If parts of the panorama seem out of place, you may not have arranged pictures properly on the grid.
- If the edges expand into a “bow-tie” effect, trying using Cylindrical projection.

See below if you're experiencing other effects...

My pictures didn't stitch together well. What can I do about it?

If stitching isn't seamless, it is almost always because the input images do not fit together well. This is generally due to one or more of the following:

- Not enough overlap between successive photos – at least 30% overlap is usually required, and best results are obtained with around 50%.
- Too much movement of the camera between shots – the camera should stay in one position if possible.
- Images are out of order – [click here](#) for an easy way to check for directional continuity.
- Camera was held too far from the eye, resulting in too much arm movement between shots (and therefore too much camera movement).
- Too much tilt on the camera between shots – the camera should be held relatively level to avoid tilt and blur.
- Not enough structure in the scene – scenes containing, for example, lots of blue sky, water or nondescript grassy fields don't have enough information for QuickStitch to match up corresponding image components.
- Movement in the scene, especially at the edge of one or more photos – if movement occurs at a critical place of overlap, QuickStitch may be unable to determine how photos fit together.
- Different zoom levels in the same scene – if your camera has a zoom lens and the zoom was changed while taking shots for the same panorama, QuickStitch will be unable to stitch your pictures.

So what can I do about it? Try using Sharp blending in order to eliminate ghost images and some overlap errors. The panorama may not be perfect, but you may be able to touch it up with photo-editing software.

Also, some problems can be corrected by eliminating one or two photos from the scene. Try experimenting by removing photos that may not fit well with others.

Stitching didn't work at all. What can I do about it?

If stitching fails completely, there are three possibilities:

1. Source images did not fit together well (see above for reasons why)
2. Exposure was very different between matching images, and QuickStitch was unable to determine how they fit together
3. A fisheye lens (or other distortion-causing lens) was used

So what can I do about it? Unfortunately, the only option is to take another set of photos, this time following the hints on proper picture-taking.

Why does my panorama appear blurry or have ghost images?

Your input images do not fit together well, or there was movement in the scene while you were taking photos. Try using Sharp blending under Stitch Options to correct this. See also the picture-taking tips for hints on avoiding these problems.

Horizontal lines seem to curve away from the camera. Why?

This is an effect of Cylindrical projection, which is best for horizontal scenes with a wide field-of-view. Select Perspective projection under Stitch Options to eliminate this effect.

I see a "bow-tie effect" that looks funny. Why?

This is an effect of Perspective projection over a wide field-of-view. In order to preserve straight lines over the entire panorama, QuickStitch must "stretch" the edges a bit. Select Cylindrical projection under Stitch Options to eliminate this effect.

How close can I be to elements in my scene?

We recommend that you stay at least 15 feet from your subject, but this is just an approximation – sometimes it is OK for scene elements to be closer. The 15-foot rule is designed to lessen an effect known as motion parallax. Motion parallax occurs when, by virtue of rotating your camera between shots, elements in the scene are uncovered or hidden by foreground elements. This is less likely to happen when using a tripod.

Can I take pictures indoors?

Yes, but since indoor shots generally include nearby objects, it becomes even more important to hold the camera level and rotate it around one position. Motion parallax, described in the FAQ topic above, is generally more of an issue as well. Follow these links for more information on taking good pictures and possibly using a tripod.

I ran out of memory or crashed while running QuickStitch on the Mac. What do I do?

QuickStitch can run out of memory in two ways. First, the user interface can run out of memory if the grid contains many images or particularly large images. It can also happen if you have generated several panoramas that are sitting open in their viewer windows. The second way QuickStitch can run out of memory is during the panorama generation process (after you hit the "Stitch" button and before a panorama is displayed).

The first step in both situations is to access the Memory control panel, make sure virtual memory is turned on and turn up the size of the virtual memory (see your computer's documentation for advice on virtual memory). You will have to restart your machine if virtual memory is not already turned on. Having given yourself more virtual memory, if you run out of memory while in the user interface (before pressing "Stitch"), then bring up the Get Info box and increase the memory preference.

Other strategies for dealing with low memory include:

- reduce the output resolution (in Stitch Options)
- use Gradual blending (in Stitch Options)
- include fewer input images
- reduce the size of any RAM disk(s) in use
- close some viewer (output) windows
- close other applications that are running on your computer and taking up memory

Check here for incompatibility problems if QuickStitch crashed on the Macintosh.

How do I get pictures into my computer?

If you are using pictures from a digital camera, see the manufacturer's instructions on loading these pictures onto your computer. This generally involves some software (and perhaps cables) that came with the camera.

But what if I'm using scanned images?

To scan regular photographs, refer to the scanner manufacturer's instructions. Once your scanned images have been saved to disk in BMP or JPG format, QuickStitch can use them.

It's hard to tell how my pictures should be arranged before stitching. Is there an easy way to check?

With a series of images that look a lot alike, it is easy to misalign them in the grid. A quick way to check for directional continuity is to click on the upper left image in the grid, hold down the CTRL key, and use the arrows keys (up, down, left, right) to scroll through the images in the grid. You should see continuous motion (left to right or top to bottom) in the Preview Area as you scroll through the images.

How should I take pictures?

1. Stand in one spot and rotate camera around one position
2. Hold camera close to the eye for best results
3. Be at least 15 ft. from subject (closer shots work best with a tripod)
4. Avoid scenes with lots of motion, such as moving cars or people
5. Hold camera level to avoid tilting and blurring
6. Overlap image pairs 50% or more (as shown below).

When shooting large scenes, take photos in a consecutive sequence to ensure proper overlap.

Should I be using a tripod?

A tripod generally produces better input photos (and therefore better panoramic results) because it reduces the amount of camera movement between shots, but it is not required unless you are within about 15 feet of the scene. QuickStitch is designed to work well with hand-held shots, provided some simple guidelines are followed. See [here](#) for an explanation of those guidelines, or see [here](#) for a visual demonstration.

What if I have more than 4 images across (or up and down)?

Enlarge (zoom out) the grid. You can have up to 6 images in any direction.

What if I have more than 6 images across (or up and down)?

QuickStitch supports only 6 images in any direction.

The grid is 6x6 at maximum size. Does this mean I can create a panorama containing 36 images?

Most panorama shots made with hand-held cameras are composed of 3 to 6 images. Hand-held panoramas can, however, come in a variety of "shapes" (not just straight across). QuickStitch is designed to address these common cases, and the grid is designed to allow the broadest variety of image configurations. For example, the grid supports:

- 1 row containing up to 6 pictures
- 1 column containing up to 6 pictures (although vertical panoramas with more than 4 pictures are rare)
- an "L" shaped pattern of images
- 5 images on a diagonal
- a 2x2 or 3x3 "box" of images, for example

The maximum size of 6x6 has more to do with supporting various configurations than it does with supporting a very large number of pictures. The maximum number of images that can be stitched depends

on a number of factors. The larger the number of images, the greater the chances of some type of matching error that would negatively effect the outcome.

Also, QuickStitch has been designed to work on machines with modest amounts of memory. Stitching together more than 8 or so images, especially on the Mac, is not recommended.

When should I use "Perspective" and "Cylindrical" projection?

Perspective – Also called rectilinear, this projection method is best for narrow to medium field-of-view scenes because it preserves optical depth and straight horizontal lines. However, over a wide field-of-view, objects at the edges may become stretched or warped with a "bow-tie" effect.

Perspective is also good for shots of vertical scenes including buildings, trees, poles and other tall objects.

Cylindrical – This projection type is best for very wide field-of-view scenes, as it maintains continuity and size relationships throughout an image (e.g. no stretching at edges).

Cylindrical often looks better for wide horizontal panoramas with a small vertical field-of-view. However, lines with horizontal components may be bent (vertical straight lines will be preserved).

What is the maximum field-of-view I can stitch?

The maximum for Perspective projection is 120 degrees, but a Cylindrical projection can go as far around as you want. However, over a wider field-of-view it becomes more important not to reposition the camera between shots. See [here](#) for tips, or use a tripod for very wide shots.

Where are my source pictures (the pictures I want to stitch)?

Pictures imported from a digital camera are often saved into the folder holding the camera software. Use the Find Images box to navigate to the folder containing your camera software, or use Windows' Find command (on the Start menu) to locate your files. Then, navigate to your images in QuickStitch using the Find Images area.

I can't see certain image files in the Find Images file list. Where are they?

QuickStitch supports only Windows Bitmap and JPEG images that end with BMP and JPG filename extensions, respectively. Files of other types will not show up in the Find Images window.

When I click on a filename, an image appears in the Image Preview Area, but when I try to move that image onto the grid, nothing happens. What's going on?

You can't drag images out of the Preview Area. Instead, drag images into the grid from the Find Images area or from the desktop. Use the Preview Area to see images by clicking on a filename (or grid image).

What are the minimum system requirements?

Minimum Requirement	Windows Version	Macintosh Version
Operating system	Windows 95/98 or NT 4.0	System 7.5 or later
Processor	Pentium	Power PC
RAM	16MB	20MB, virtual memory on
Screen colors	256	256
Screen resolution	800x600 sugg., 640x480 min.	800x600 sugg., 640x480 min.
Disk space (for software)	30MB	36MB

The image preview does not appear in the Preview Area, or it appears as a black square.

QuickStitch is experiencing a rare conflict with your graphics display adapter, which usually happens only in 256 color mode. Try the following in order until the problem is solved:

1. change the display mode to 16, 24, or 32-bit color depth using the Display icon in the Control Panel
2. switch your graphics adapter setting to standard VGA or Super VGA using the Display icon in the Control Panel
3. if you know where your images go, the fact that they show up black in the grid does not affect stitching or the display of the output. If the above steps don't work, a final workaround is simply to ignore it

How many viewer windows can be open at once?

Up to 9, and each window can contain panoramas made from different image sets.

How do I get my pictures onto the grid?

Drag them from the Find Images box or use the Include button as explained in the next topic. See Help for a complete explanation, or for a visual demonstration.

How do I arrange pictures in preparation for stitching?

Recreate your panoramic scene in the QuickStitch grid by organizing images horizontally and/or vertically as they relate to one another. Follow the brief instructions below, or see Help for a visual demonstration.

Select each file in the Find Images box and drag it into the grid with the left mouse button. Or, use the Include button located near the grid. When finished, the layout of images on the grid should approximate the original scene. For instance, pictures of a tall building would be arranged vertically, while images of a wide horizon would be laid out horizontally. Scenes that include both horizontal and vertical segments would be laid out in a matrix fashion like this:

Use the and buttons to rotate image(s) between portrait and landscape layout (if necessary). All images should have the same layout when stitched.

What are the output image sizes?

The options below refer to the total panorama size before cropping. Note that if the output image would be larger than the selected maximum, the output will be re-scaled to fit under the maximum.

- Small - Maximum output size of 76,800 pixels, the equivalent of a 320x240 image. Good for world wide web applications and other situations where small file sizes are needed.
- Medium - Maximum output size of 480,000 pixels, the equivalent of an 800x600 image. Appropriate for most uses.
- Large - Maximum output size of 1,310,720 pixels, the equivalent of a 1280x1024 image. Preserves high resolution but consumes more memory and results in much larger files.
- Jumbo - Maximum output size of 3,145,728 pixels, the equivalent of a 3-megapixel image. Best for applications requiring very high-resolution output, and should only be used on fast computers with large amounts of RAM.

Note that high resolution output is only possible with high resolution input images. Output panorama files may end up smaller than the selected size due to:

- image dimensions
- low-resolution input photos, i.e. not enough input pixels to create a large output image
- high amount of input photo overlap

- cropping

I got an error message. What does it mean?

"Please drop images into grid cells and then arrange them."

- You see this if you have attempted to drag an image into a location other than a grid cell.

"Images can only be moved into empty grid cells."

- You see this if you have attempted to move an image into a grid cell that is already occupied by another image. If you want to move the image into that cell, first move the image that is already there into an empty cell.

I'm in the viewer window (looking at the panorama), but how do I get back to the first (grid) window?

The grid window is always present. It may, however, be hidden under the viewer window or other windows on the computer desktop. It also may be minimized to the taskbar (PC only). To show the grid window, adjust the position of other windows or maximize it from the taskbar.