

## Re: image Clone problem when using LockBits

**Source:**

<http://www.tech-archive.net/Archive/DotNet/microsoft.public.dotnet.framework.drawing/2004-04/0029.html>

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**From:** Norvin Laudon (*nospamnorvinll\_at\_molinospamenergy.com*)

**Date:** 04/02/04

Date: Fri, 2 Apr 2004 14:36:02 -0800

Hi Bob,

Unfortunately, I haven't made any progress with my video stream averaging program. I'm going to try to redescribe this problem as simply as possible.

1. One thread of my program is constantly acquiring pictures from a frame grabber. It creates 8bpp indexed Bitmap objects using a pointer to some image data. As each frame is ready, it fires an "ImageReady" event. (see code at bottom)

2. The averaging thread subscribes to the "ImageReady" event. As each frame arrives, it clones it and adds it to an ArrayList object as follows:

```
<code>
    imageQueue.Add((Bitmap)e.bitmap.Clone());
</code>
```

The problem is, when the next frame arrives, *\*all\** images which are in the ArrayList contain the same bit data as the new frame! Even though I use the Clone() method when adding images to the ArrayList, these images are somehow tied back to the original frame.

The following is the code that creates each image and fires the "ImageReady" event:

```
<code>
    int ptr = FrameBuffer(frh); // get a pointer to the image data

    if (ptr==0)
    {
        throw new Exception("Fatal Frame Grabber Error: Grab failed.");
    }

    // use the pointer to create a bmp
    Bitmap bmp = new Bitmap(640, 480, 640,
        PixelFormat.Format8bppIndexed,
        new System.IntPtr(ptr));
```

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```
// use the greyscale palette
bmp.Palette = greyPal;

if (ImageReady != null) // if anyone has subscribed to this event, fire
it
    ImageReady(this, new ImageReadyEventArgs(bmp));
</code>
```

Can anybody shed some light on this?

Thanks,  
Norvin

"Norvin Laudon" <nospamnorvinll@molinospamenergy.com> wrote in message  
news:eLqgvqEGEHA.3288@TK2MSFTNGP12.phx.gbl...

```
> Hi Bob,
>
> I getting close to the root of the problem. My frame grabber (unmanaged
dll)
> gives me a pointer to a frame buffer which contains some image data (8bpp,
> Indexed). I use one of the overloads of the Bitmap class (the one that
takes
> a pointer) to create a Bitmap object, then fire an event to pass it off to
> my other functions.
>
> I tweaked your simple test to simulate (see below), and sure enough I can
> create a problem. When I create the a bitmap using Scan0 of another
bitmap,
> the data in both bitmaps is modified when either is modified. (As one
would
> expect)
> However, also as you'd expect, by using the .Clone() method on either of
> these bitmaps, you can make this problem go away.
>
> I think my problem may be related to the fact that I'm using an ArrayList
to
> store images as they arrive in my function. I'll troubleshoot this more
> tomorrow...
>
>
>
> private void button1_Click(object sender, System.EventArgs e)
> {
> unsafe
> {
> // create a copy of pictureBox1,
> // using the Scan0 pointer to the bits
> BitmapData bmData = new BitmapData();
> bmData = ((Bitmap)(this.pictureBox1.Image)).LockBits(new Rectangle(new
> Point(0,0),this.pictureBox1.Image.Size),ImageLockMode.ReadWrite,
> this.pictureBox1.Image.PixelFormat);
```

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```
> Bitmap bm = new Bitmap(bmData.Width, bmData.Height, bmData.Stride,  
> bmData.PixelFormat, bmData.Scan0);  
> ((Bitmap)(this.pictureBox1.Image)).UnlockBits(bmData);  
>  
> Graphics g=Graphics.FromImage(bm);  
> g.FillEllipse(Brushes.Red,0,0,300,300);  
>  
> g.Dispose();  
>  
> this.pictureBox2.Image=bm;  
>  
> this.pictureBox1.Invalidate();  
>  
> }  
>  
> }  
>  
>  
>  
> "Bob Powell [MVP]" <bob@_spamkiller_bobpowell.net> wrote in message  
> news:Opr2H86FEHA.2576@TK2MSFTNGP11.phx.gbl...  
>> hmm, on further investigation I find that I am getting a different copy  
of  
>> the bits when I do this simple test.  
>>  
>> private void button1_Click(object sender, System.EventArgs e)  
>>  
>> {  
>>  
>> Bitmap bm=(Bitmap)this.pictureBox1.Image.Clone();  
>>  
>> Graphics g=Graphics.FromImage(bm);  
>>  
>> g.FillEllipse(Brushes.Red,0,0,300,300);  
>>  
>> g.Dispose();  
>>  
>> this.pictureBox2.Image=bm;  
>>  
>> this.pictureBox1.Invalidate();  
>>  
>> }  
>>  
>>  
>>  
>> Can you post some code to show what you're doing please?  
>>  
>>  
>> --  
>> Bob Powell [MVP]  
>> Visual C#, System.Drawing
```

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>>  
>> *All you ever wanted to know about ListView custom drawing is in Well  
> Formed.*  
>> *<http://www.bobpowell.net/currentissue.htm>*  
>>  
>> *Answer those GDI+ questions with the GDI+ FAQ*  
>> *[http://www.bobpowell.net/gdiplus\\_faq.htm](http://www.bobpowell.net/gdiplus_faq.htm)*  
>>  
>> *Read my Blog at <http://bobpowell.net.blogspot.com>*  
>>  
>> *"Norvin Laudon" <123@asd.com> wrote in message*  
>> *news:eROSSw6FEHA.3908@TK2MSFTNGP12.phx.gbl...*  
>>> *Thanks Bob.*  
>>>  
>>> *Any way I can guarantee a "deep copy" of the bits?*  
>>>  
>>> *By the way, I am processing a live video stream. I maintain a 4 image*  
>> *FIFO*  
>>> *image queue, which I average together. The average is recalculated as*  
>> *each*  
>>> *new frame arrives. Because I need to maintain the integrity of this*  
>> *queue,*  
>>> *I*  
>>> *need to make sure the same bit data isn't getting "re-used" by the*  
>>> *framework.*  
>>>  
>>> *Thanks,*  
>>> *Norvin*  
>>>  
>>> *"Bob Powell [MVP]" <bob@\_spamkiller\_bobpowell.net> wrote in message*  
>>> *news:OMARuO3FEHA.684@tk2msftngp13.phx.gbl...*  
>>>> *Clone of an inimage is not a "deep copy". This is to say that a*  
>> *seperate*  
>>> *copy*  
>>>> *of all the bits are not made.*  
>>>>  
>>>> *The Clone function calls GdiCloneImage which is not well documented*  
>> *but*  
>>>> *which I suspect returns a new handle to the existing image bits.*  
>>>>  
>>>>  
>>>> *--*  
>>>> *Bob Powell [MVP]*  
>>>> *Visual C#, System.Drawing*  
>>>>  
>>>> *All you ever wanted to know about ListView custom drawing is in Well*  
>>> *Formed.*  
>>>> *<http://www.bobpowell.net/currentissue.htm>*  
>>>>  
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