

# The format of bitmap resources

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Another in a sporadic series on the format of Win32 resources. Here's a question from a customer:

I'm noticing some strange behavior: When I call `LoadResource` then `LockResource` on an embedded bitmap, the data being returned by `LockResource` is not a properly formatted bitmap. The data is missing the `BITMAPFILEHEADER`, but the rest of the file is there.

`SizeOfResource` also states that the bitmap resource is 14 bytes smaller than it actually is. 14 bytes happens to be equal to `sizeof(BITMAPFILEHEADER)`. However, if I load the bitmap directly using `LoadBitmap`, everything works fine. If I look at the resource using Visual Studio, the Bitmap displays correctly and the binary data correctly includes the `BITMAPFILEHEADER`.

Anyone have any ideas as to why `LoadResource` is not correctly returning the `BITMAPFILEHEADER`?

Amusingly, a change to the word order changes the question to its own answer:

`LoadResource` is *correctly not* returning the `BITMAPFILEHEADER`. In other words, `LoadResource` is not stripping off the `BITMAPFILEHEADER`: `rc.exe` is. The format of bitmap resources are pretty simple. They are just a bitmap file with the `BITMAPFILEHEADER` stripped off. Because it's just the *file header*, the thing tacked onto the front when saved as a file. It's not part of the bitmap itself. For example, if you are using a `BITMAPINFOHEADER`-formatted bitmap, then the resource format is a `BITMAPINFOHEADER` followed by the pixels. I can't explain why Visual Studio is showing you a `BITMAPFILEHEADER` that doesn't exist. They're probably trying to reduce confusion for people who don't know the format of bitmap resources and wonder why the binary data doesn't match their `.bmp` file. Of course, in so doing, they end up creating confusion for people who do know the format of bitmap resources, or—as happened here—people who don't know the format of bitmap resources and think that the `LoadResource` function is messing with their bitmaps.

(For the record, the `LoadResource` function doesn't mess with bitmaps, icons, menus, or whatever. It just returns the raw binary data of a Win32 resource. It doesn't know the internal format of those resources any more than the file system knows the internal format of

a Quicken data file or a shortcut file.)

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