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Subject: Paste Properly Scaled Images Into RichEdit

Posted by [emve](#) on Sun, 24 Nov 2024 20:50:24 GMT

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Hi,

I'm evaluating RichEdit using this code in main.cpp:

```
#include <CtrlLib/CtrlLib.h>
#include <RichEdit/RichEdit.h>
using namespace Upp;

GUI_APP_MAIN
{
    RichText txt;
    {
        RichPara para;
        RichPara::Format fmt;
        (Font&)fmt = Monospace(50).Bold();
        para.Cat("", fmt);
        txt.Cat(para);
    }

    RichEdit e;
    e.ShowCodes(NULL); //hide enter marks
    e.Clear();

    HDC screen = GetDC(NULL); // Get device context for the screen
    int dpiX = GetDeviceCaps(screen, LOGPIXELSX); // Horizontal DPI
    int dpiY = GetDeviceCaps(screen, LOGPIXELSY); // Vertical DPI
    ReleaseDC(NULL, screen);

    e.Pick(pick(txt));

    TopWindow win;
    win.Add(e.SizePos());
    win.Run();
}
```

When I copy paste an image (I use GreenShot) into RichEdit, the pasted image shown is bigger.

Here I copied (PrintScreen using GreenShot) top left corner of the window and pasted it back into RichEdit:

When I paste the image from file, the result is the same.

Can it be solved anyhow? I asked chatgpt and it kinda hallucinated this solution (as there is apparently no WhenPaste event handler in RichEdit object):

```
class MyApp : public TopWindow {
    RichEdit richEdit;

public:
    MyApp() {
        Title("Adjust DPI for Pasted Image").Sizeable();

        // Intercept the paste action and adjust the image DPI
        richEdit.WhenPaste = [&]() {
            // Check if the clipboard contains an image
            if (ClipboardHas<Image>()) {
                Image img = ReadClipboardImage();
                if (!img.IsEmpty()) {
                    // Get system DPI
                    Size dpi = GetPrimaryScreenDPI(); // Get DPI of the primary screen
                    double scaleFactor = dpi.cx / 96.0; // Assuming 96 DPI as the base

                    // Scale the image
                    int newWidth = img.GetWidth() * scaleFactor;
                    int newHeight = img.GetHeight() * scaleFactor;
                    Image scaledImage = Rescale(img, newWidth, newHeight);

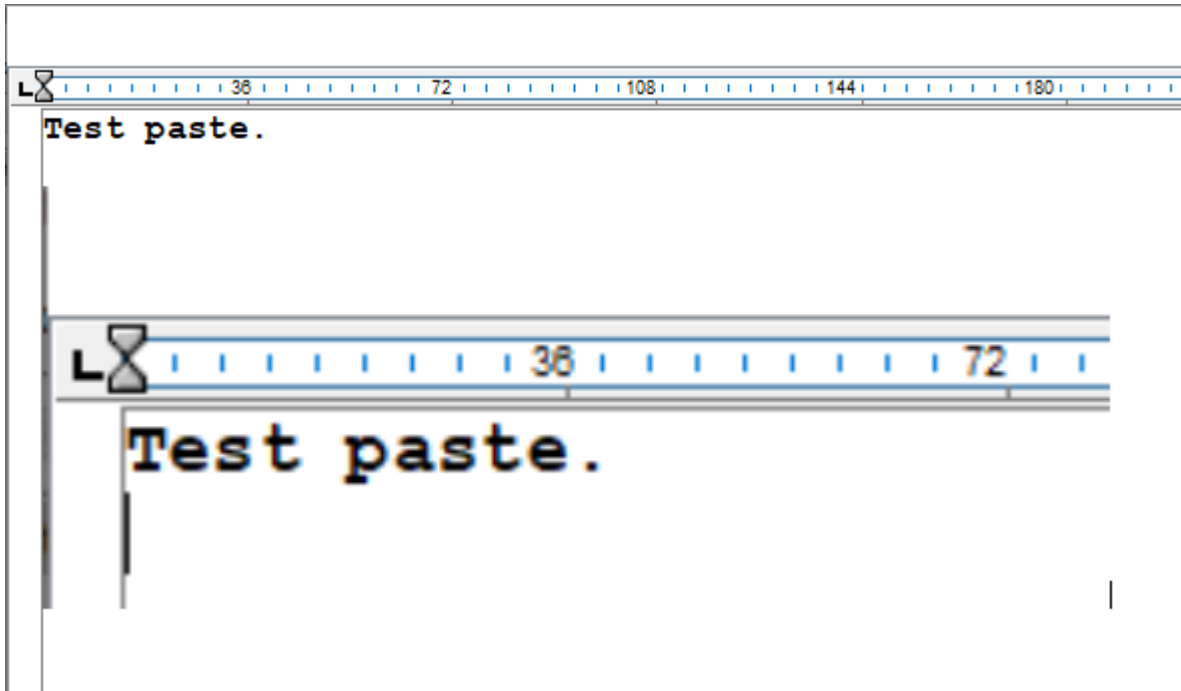
                    // Insert the scaled image into the RichEdit control
                    richEdit.PasteImage(scaledImage);
                }
            } else {
                // Default paste behavior for non-image content
                richEdit.Paste();
            }
        };

        Add(richEdit.SizePos());
    }
};
```

Michal

## File Attachments

1) [2024-11-24 21\\_38\\_02-Clipboard.png](#), downloaded 342 times



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Subject: Re: Paste Properly Scaled Images Into RichEdit  
Posted by [emve](#) on Sun, 24 Nov 2024 20:55:17 GMT

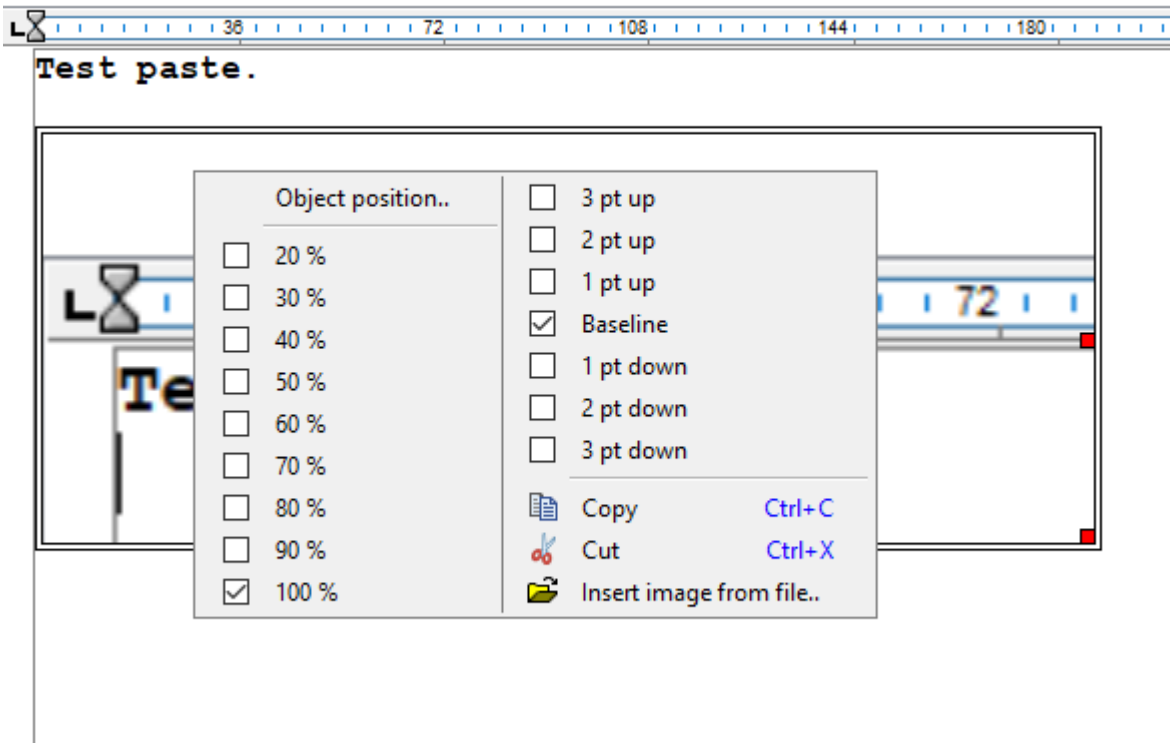
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Here is the image with border:

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#### File Attachments

1) [2024-11-24 21\\_52\\_02-.png](#), downloaded 287 times



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Subject: Re: Paste Properly Scaled Images Into RichEdit  
Posted by [emve](#) on Mon, 25 Nov 2024 09:20:38 GMT  
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I'm just wondering where those numbers came from:

But anyway, someone fix the proper image pasting to RichEdit, please.

Michal

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### File Attachments

1) [UPP-InitSize.png](#), downloaded 304 times

```
void RichObject::InitSize(int cx, int cy, void *context)
{
    Size sz;
    Size phsz = 600 * GetPixelSize() / 96; // 100% size...
    if(cx || cy)
        sz = GetRatioSize(phsz, cx, cy);
    else
        sz = phsz;
    if(sz.cx > 2000 || sz.cy > 2000)
        sz = sz.cx > sz.cy ? GetRatioSize(phsz, 2000, 0)
            : GetRatioSize(phsz, 0, 2000);
    SetSize(sz);
}
```

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Subject: Re: Paste Properly Scaled Images Into RichEdit  
Posted by [mirek](#) on Tue, 26 Nov 2024 13:03:42 GMT

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emve wrote on Mon, 25 November 2024 10:20I'm just wondering where those numbers came from:

But anyway, someone fix the proper image pasting to RichEdit, please.

Michal

TLDR: Nothing to fix, but I can add ScreenRichEdit

The final target of RichText is printer. So pixel values are sort of irrelevant. U++ has two coordinate systems (only...): Screen pixels and 600DPI laser printer "pixels" (these are called "DOTS" . So what you see is an attempt to approximately convert screen image size to paper. As most displays are 96DPI, we get 600/96 ratio. And those 2000 values are just sanity limit. But also beware that those "dots" are then converted back, so e.g. changing this to 1/1 does not help.

What you want is possible, but needs some work. Adding to the queue, please remind me if nothing happens in 1-2 months.

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Subject: Re: Paste Properly Scaled Images Into RichEdit  
Posted by [emve](#) on Tue, 26 Nov 2024 16:05:21 GMT

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mirek wrote on Tue, 26 November 2024 14:03emve wrote on Mon, 25 November 2024 10:20I'm just wondering where those numbers came from:

But anyway, someone fix the proper image pasting to RichEdit, please.

Michal

TLDR: Nothing to fix, but I can add ScreenRichEdit

The final target of RichText is printer. So pixel values are sort of irrelevant. U++ has two coordinate systems (only...): Screen pixels and 600DPI laser printer "pixels" (these are called "DOTS" . So what you see is an attempt to approximately convert screen image size to paper. As most displays are 96DPI, we get 600/96 ratio. And those 2000 values are just sanity limit. But also beware that those "dots" are then converted back, so e.g. changing this to 1/1 does not help.

What you want is possible, but needs some work. Adding to the queue, please remind me if nothing happens in 1-2 months.

Ok, thank you for the clarification Mirek.  
And yes, ScreenRichEdit will be welcome .  
Michal