Subject: Linux embedded development without X11/GTK dependencies
Posted by jjacksonRIAB on Thu, 09 Jul 2020 11:16:52 GMT
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I've been trying to peruse the forums because there's not much documentation on this, but whenever I try to do an embedded UI using framebuffer/SDL or some other technology without a window manager (rainbow, etc), X11/GTK dependencies always seem to be linked in. What's the most up-to-date way of removing these linkages if there are any? I'm not sure what the status is on anything. Was Rainbow folded into VirtualGUI?

It would be nice to be able, for example, even to just use Painter as a mostly standalone thing without the X dependency but the way things appear to be set up now it's assumed if you're not using GTK you're using X11 when you really want neither.

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by jjacksonRIAB on Mon, 11 Oct 2021 06:27:34 GMT
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To answer my own question it would seem X11 on linux is kind of a hard requirement for pretty much anything except non-accelerated framebuffer /dev/fb0 and DirecFB which is essentially deprecated, so it's outside of U++'s scope.

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by shawnx on Mon, 28 Nov 2022 15:55:34 GMT
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in the case of Qt it has its own embedded version, for u++ to work in embedded it will have to do something separately as well I think.

https://github.com/directfb2/DirectFB2 is alive again by the way.

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by fudadmin on Tue, 29 Nov 2022 09:19:03 GMT
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Interesting topic.

Btw, in regards to promoting upp...

so e.g

Quote:The demo can work with multiple Graphical User Interface Toolkits:

- EFL (Enlightenment Foundation Libraries)

- FLTK (Fast Light ToolKit)
- GLFW (GL Frame Work)
- GLUT (OpenGL Utility Toolkit)
- GTK+ (Gimp ToolKit)
- Qt (Q toolkit)
- SDL (Simple Directmedia Layer)
- SFML (Simple and Fast Multimedia Library)
- wxWidgets (Windows X Widgets)

https://github.com/caramelli/yagears

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by shawnx on Tue, 29 Nov 2022 17:15:35 GMT
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upp is absent from all similar lists somehow, I spent quite some time on c++ gui searching and it took me a few years to find it, google somehow just made it invisible.

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by zsolt on Wed, 30 Nov 2022 15:00:33 GMT
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X11 is required, but I use Paint, and PdfDraw in one of my server projects without any GUI. Why is it a problem, if those X11 libs are on the system?

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by shawnx on Wed, 30 Nov 2022 15:08:15 GMT
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it's moving towards wayland from x11 these days.

upp-embedded(similar to qt-embedded) is actually interesting because there is no real offering in the market other than qt-embedded as far as I am aware, but you must pay). It runs on top of SDL2/framebuffer/directfb2, useful for HMI(human machine interface), or any non-smartphone-embedded-device that carries a small display, most of them do not need 3D acceleration either.

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by zsolt on Wed, 30 Nov 2022 15:15:41 GMT
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What is your embedded platform?

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by zsolt on Wed, 30 Nov 2022 15:26:41 GMT
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BTW, I just recompiled my server project with VIRTUALGUI flag and now there are absolutely no X11 dependencies. And PDF generation works perfectly. Thanks for the idea :)

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by jjacksonRIAB on Wed, 30 Nov 2022 20:17:05 GMT
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zsolt wrote on Wed, 30 November 2022 16:15What is your embedded platform?

This was a while ago but I was attempting to run under TinyCore linux.

zsoltWhy is it a problem, if those X11 libs are on the system?

No reason, I'd just like to try my hand at writing my own WM/DE without the X11 dependency. I just have this idea (and I'm probably not the only one) of working on some kind of small totally U++-based DE.

I've been messing with Vulkan + SDL2. Getting Vulkan/X11 working as a Ctrl under U++ was not bad (after you get over the major hurdle of setting up Vulkan itself - there's so much time spent in initial programming that it's a happy moment when you see your first triangle drawn on the screen), it's true that you can use Paint but it would also be nice to have a VulkanDraw class. I've only gotten to the point though where I can use assimp to import and draw FBX models so it would be quite a bit more work to look over the GLDraw code and get a Draw backend going.

shawnx wrotehttps://github.com/directfb2/DirectFB2 is alive again by the way.

Cool I'll have to try this.

It would be nice to swapping SDL2 out with DirectFB2

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by Oblivion on Thu, 01 Dec 2022 16:22:56 GMT
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By the way,

We do have a LinuxFrameBuffer package, based on VirtualGui.

I can't quite remember who was the original author of it (Zbych?), but I had tried to modify and improve it (It allows FB switching, etc.). (I'd plans to use this with TerminalCtrl) Bu it's still far from being perfect.

You can find the code attached. It if works for you or needs some tweak, I can upload and maintain it.

Best regards,
Oblivion

File Attachments

1) LinuxFrameBuffer.zip, downloaded 152 times

Subject: Re: Linux embedded development without X11/GTK dependencies
Posted by mirek on Thu, 01 Dec 2022 18:25:43 GMT
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shawnx wrote on Wed, 30 November 2022 16:08it's moving towards wayland from x11 these days.

upp-embedded(similar to qt-embedded) is actually interesting because there is no real offering in the market other than qt-embedded as far as I am aware, but you must pay). It runs on top of SDL2/framebuffer/directfb2, useful for HMI(human machine interface), or any non-smartphone-embedded-device that carries a small display, most of them do not need 3D acceleration either.

You might want to check VirtualGui (e.g. reference/SDL2UWord). There is just about 15 virtual methods that you have to implement to make it work on anything. E.g. implementation with SDL2 backend has then 600 lines.
