Installation of GrblGru under Linux using wine
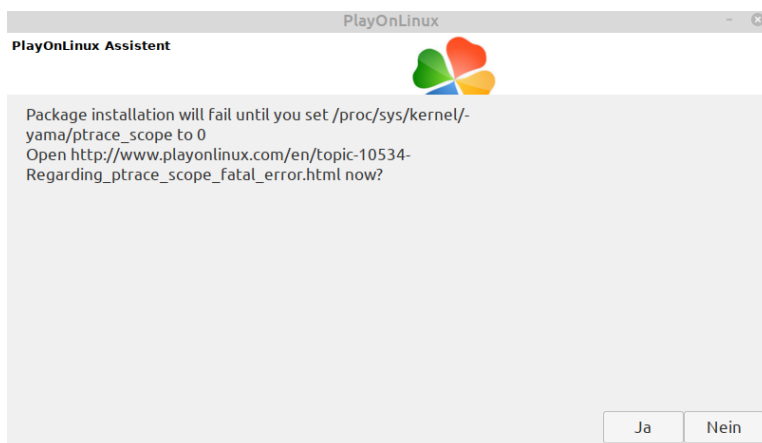**Used was Linux Mint 20, Cinnamon 64-bit**

1. Installing PlayOnLinux

GrblGru can be installed directly from the command line using wine, but it is generally helpful to use a frontend for wine when installing Windows programs, which makes configuration easier. For this I have used **PlayOnLinux**. The version provided in the Linux Mint repository is not the latest version, so 4.3.4 was manually installed, see **https://www.playonlinux.com/de/**

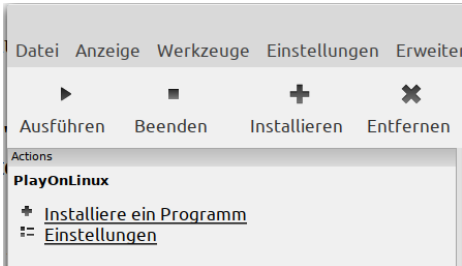## 2. Installation of GrblGru using PlayOnLinux

To avoid the following error message during the installation under Ubuntu and its derivatives like Mint, you can enter this command in the terminal:
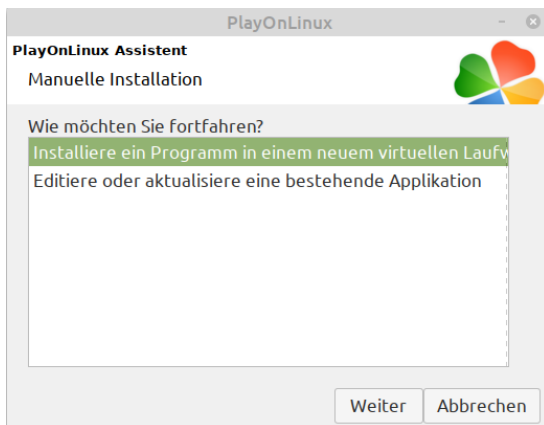echo 0 | sudo tee /proc/sys/kernel/yama/ptrace_scope

This is a temporary solution. For the permanent solution,
see **https://www.playonlinux.com/en/topic-10534-Regarding_ptrace_scope_fatal_error.html**
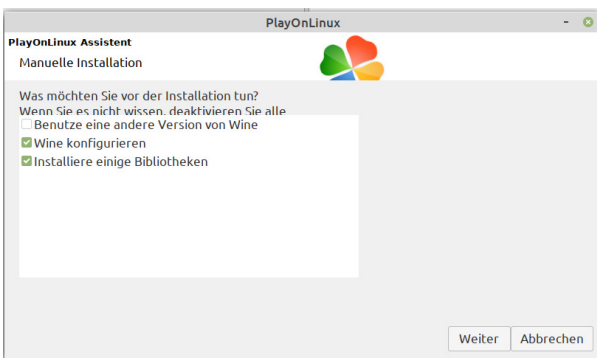
Installation:

In PlayOnLinux there are 3 places where you can install a Windows program, but they are all the same. Either under File, or like on the picture at the two places where it says "Install".
A selection of some preconfigured programs will appear.

Because GrblGru is not listed here yet, select "Install a program that is not listed. Then "Next" and after that you have the choice to install into a new virtual drive, or to update an existing drive or application. We choose "Install a program in a new virtual drive", which we then give a name.
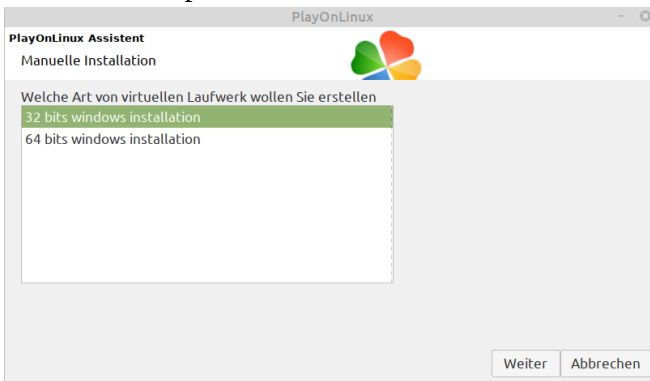

At the next page set the two checkboxes, because we have to reinstall something and configure Wine.
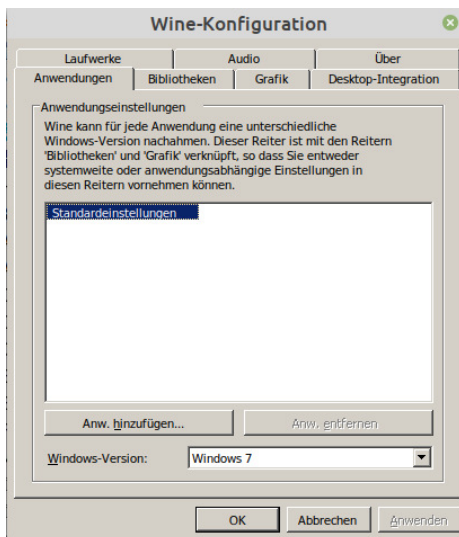
As Wine I used the system version 4.0, but it should work with other versions as well. If not, you can still change it afterwards.
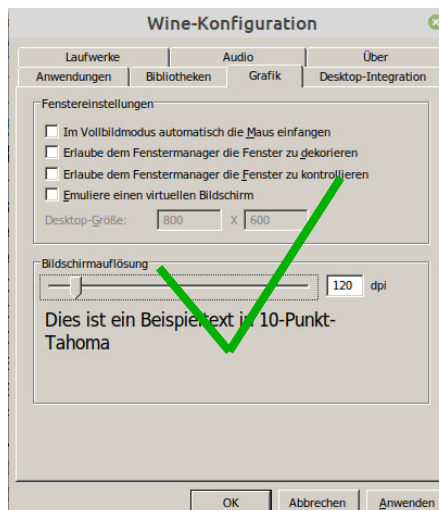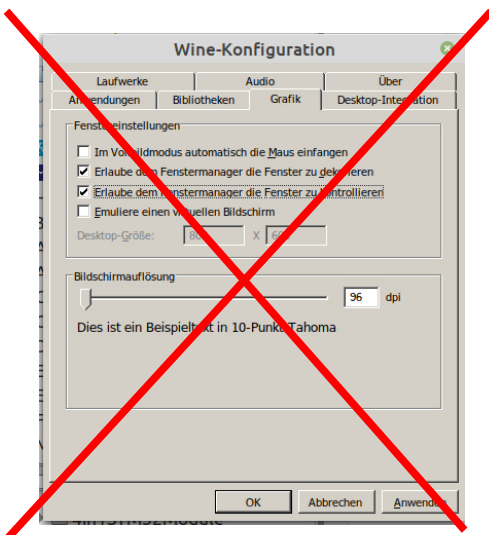
In the next step we choose the 32 bit installation, with 64bit it does not work.

As Windows version you can choose Windows 7, which I think is a good choice. Since GrblGru also runs under XP, you could also choose XP. I have not tried higher Windows versions.

On the graphics page it is important to uncheck the 2 checkboxes. As screen resolution I have chosen 120dpi. Depending on your screen resolution it is also useful to leave it at 96dpi, which you can try if GrblGru is installed. The Wine configuration can also be changed afterwards.
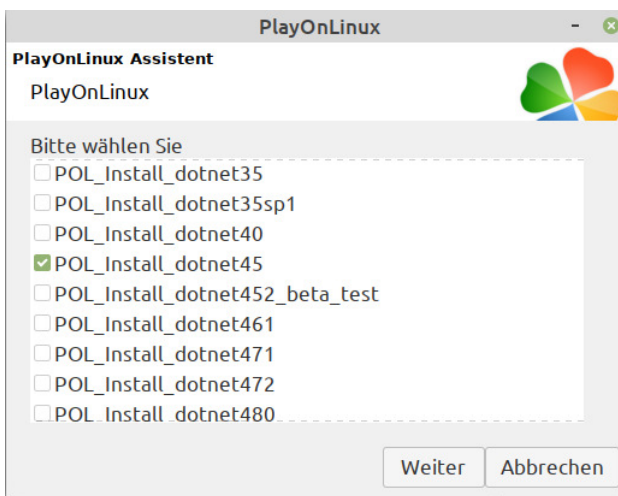
If you leave the checkboxes checked, you will have problems with the menus in GrblGru. But there is also a conflict: If you leave the checkbox checked at "Allow the window manager to control the windows", the menus will close as soon as you stay a little bit longer on a menu entry with the mouse. If you remove the check, the menus will work, but a flag will be set internally and GrblGru will always stay in the foreground and hide the windows from other programs.

Then you can already confirm this dialog with OK.

In the installation window you are asked if you still want to install libraries. GrblGru needs at least DotNet4.0, so it is sufficient to select POL_Install_dotnet40, or higher. Dependencies from older versions are automatically installed.
I could not install higher than DotNet4.5, but it is not necessary. When installing .Net 3.5 an error message appears, but you can confirm it.
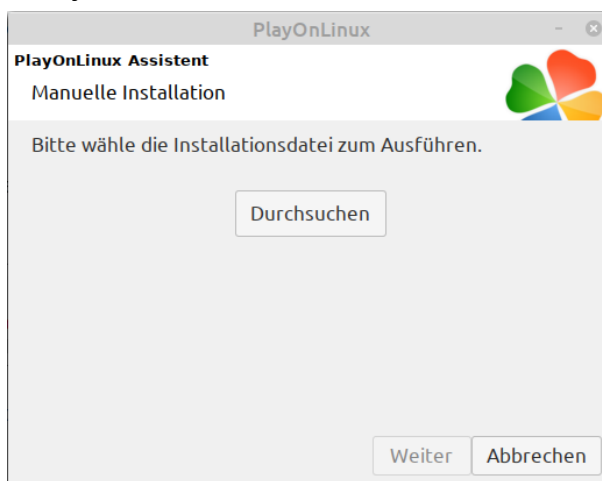

That takes time. So it is time to get a coffee :).
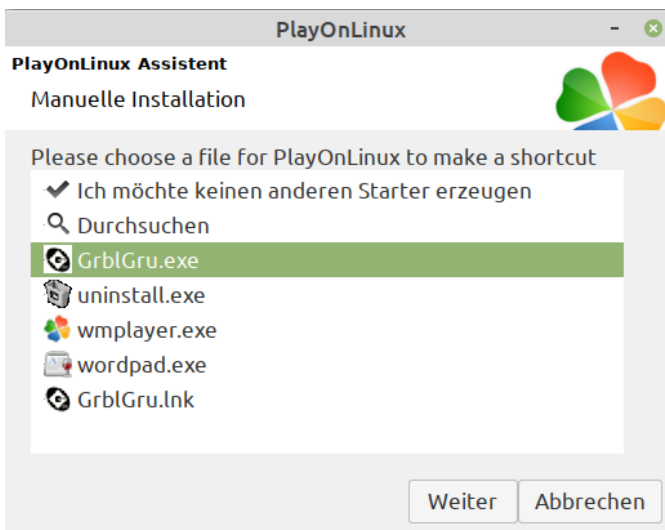But keep looking at the screen, because you have to press "Next" more often.
If you are asked if mono should be removed, confirm again and again with "Yes".

These steps usually have to be taken only once. New versions of GrblGru can be installed into the same partition and have all necessary dependencies.
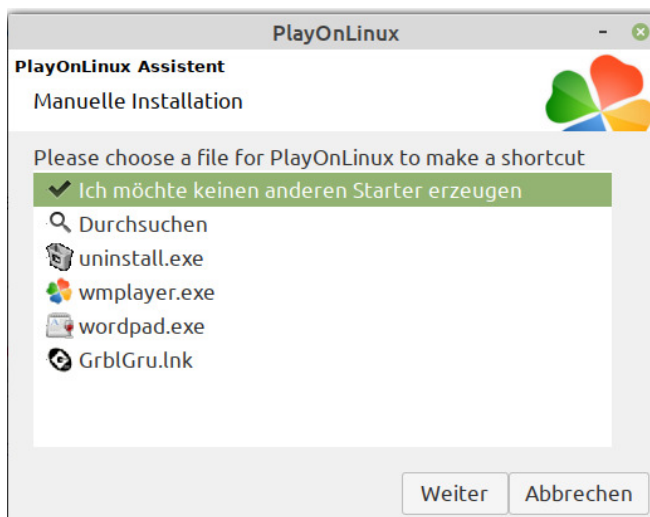
Next you will be asked for the installation file, select GrblGruInstallerVxy.exe here.

I have confirmed all the necessary queries for GrblGru.
After that you can display a shortcut on the desktop.

And already you are almost finished, but only almost :).

In order for GrblGru's tool menu to display the images correctly, the 32bit version of libjpeg62 must be installed. This can be done with: *sudo apt-get install libjpeg62:i386*

That's it for now with the installation and you can start GrblGru either via PlayOnLinux, or via the created link on the desktop. Up to this point you can already work with the software and get familiar with the simulation.
Next, we get the serial port up and running so that you can run a machine.

3. Set up serial interface

If you are using a Wine version < 2.8, it is probably enough to place a symbolic link to the device the Arduino is connected to. In my case it is /dev/ttyUSB0 and you have to change to the directory where PlayOnLinux has stored the wine version and then change to dosdevices, e.g.
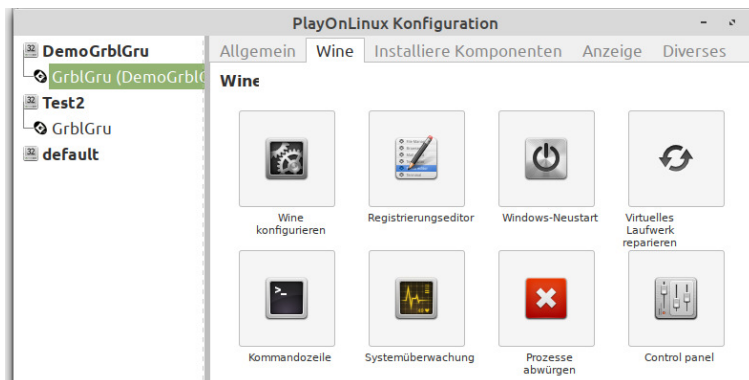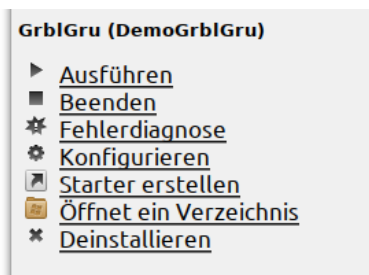cd ~/.PlayOnLinux/wineprefix/NameDerPartition/dosdevices
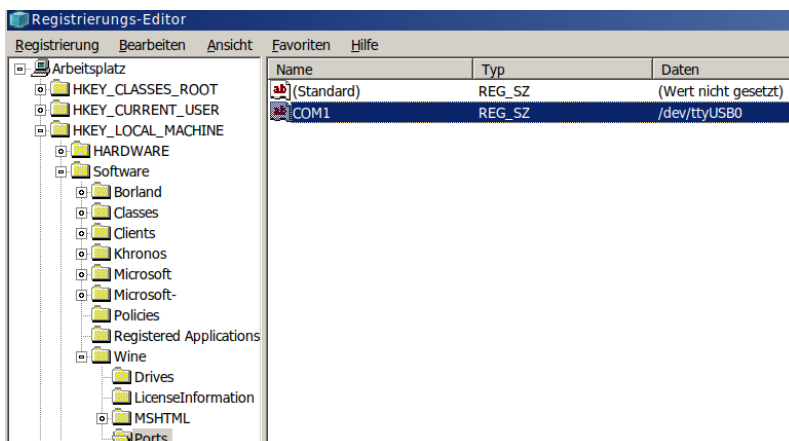
Then you make the link to a com interface, for example
ln -s /dev/ttyUSB0 com1

For wine versions >= 2.8 you have to open the registry and set a key. But here I did not try if you have to set the link additionally. It was already set at that time, but it is very likely not needed.

In order to open the Registry, one can select the point "Configure" in the put on partition and call there in the tab „Wine" the Registry editor (registry).

Then create a "string" (with the right mouse button) for each interface in
HKEY_LOCAL_MACHINE\Software\Wine\Ports that has the name of the desired interface, e.g.
COM1 and as value the device, including directory, e.g. /dev/ttyUSB0

Now you should be able to address the Arduino Uno, when it is connected to ttyUSB0 under Linux, in GrblGru with the Com1 interface.

Before you try this, you can use a terminal program to make sure that you can connect to the Arduino directly under Linux.
As serial terminal program I used "Cutecom", because I had no success with "Putty".

The settings were: