Instructions for Setting Up a GTK+ Work Environment on Windows

I know that the following instructions produce correct results for Windows XP and Windows 2000, but I do not know whether they will also work on machines running the new Windows Vista.

Download The Installers

Before you install any software, you should first obtain all of the installers. There are five that you need. You should download the latest versions of these from the Sourceforge website listed below.

1. `MinGW-5.1.3.exe`
2. `MSYS-1.0.11-2004.04.30-1.exe`
3. `gdb-6.3-2.exe`
4. `devcpp-4.9.9.2_nomingw_setup.exe`
5. `gtk-dev-2.10.11-win32-1.exe`

The versions that listed above are not necessarily the latest, stable versions. You should only install the stable versions.

You can get each of the installers listed above, or more recent ones, from the SourceForge website. To utilize SourceForge you have to know the group to which your software belongs. For example, to access the page containing the MinGW and MSYS installers, you need to go to the MinGW group. You can get to it by using the URL http://sourceforge.net/projects/mingw/, where you can find the latest version.

Since this will require a bit of jumping back and forth, I have made this procedure a heck of a lot easier for you by giving you links in this document to download each of the above-referenced installers. You should do the following:

First, download the installer for MinGW: MinGW-5.1.3

Second, download the installer for MSys: MSYS-1.0.11-2004.04.30-1

Third, download the installer for the GNU debugger, gdb: gdb-6.3-2

Next, if you already have Dev C++ installed on your machine, it is better to uninstall it and reinstall the following one. Your version might have already installed MinGW, and my experience and the general consensus of the GTK user group is that ***it is better to install MinGW before installing Dev C++***, and then install a MinGW-free version of Dev-C++. You can download the appropriate installer on the SourceForge page, in the Dev-C++ group, but I have made it easy for you by providing this link: devcpp-4.9.9.2_nomingw_setup

Finally, download the GTK+ installer. The following link downloads the installer for the complete development environment, including the GTK runtimes: gtk+-bundle_2.22.1- for win32

Install the Software

As I stated above, if you already have Dev C++, before doing anything else, you should uninstall it.

You can watch the Quicktime screen-cast that was created by James Booker to demonstrate the steps visually, but it does not include the Dev-C++ installation. (You have to have software or a plug-in that can display `.mov` files, which are QuickTime movies.)

Run the MinGW installer first. When asked for a directory into which to install it, make it **X:\MinGW**, where X is the drive letter for the drive on which you want to install ALL of the software, e.g. **C:\MinGW**. When you are prompted for the name of the menu item to put into your Programs menu, use **Develop\MinGW**. (Note the backslash!) Creating a folder makes it easy and is logically coherent.

Open up the *System Properties* dialog, by right-clicking the *My Computer* icon and selecting *Properties* from the menu. Open the *Advanced* tab and click the *Environment Variables* button. In the *Environment Variables* dialog box, select the *Path* variable in the *System Variables* list, and click *Edit*. In the edit window, add the path "**X:\MinGW\bin**" to the **end** of the *Path*, where X is the drive letter you used above. Click as many OK's as you need to exit.

Run the gdb installer. You will not have to do anything. Just wait for it to finish.

Run the MSYS installer, and install it into the default location that it supplies, on your **X** drive. Put the menu item for it into **Develop\MinGW**. When the black command line screen comes up after the installation, and it asks you a few questions, answer "y". When it asks you for the path to the MinGW directory, at which point you must enter **X:\MinGW**.

Now run the Dev-C++ installer. Bloodshed Dev-C++ is very particular about its path. It cannot be inside a containing folder, and it cannot contain spaces in the path name. Therefore, you should make sure that you put it into **X:\Dev-cpp**, which is the default in the installation (where **X** is the drive letter you used before.)

Now you can install GTK+. Make sure that when the dialog box comes up asking which environments to register it into, you select MSys and Dev-cpp. If you have Cygwin on your machine, you can also choose Cygwin.

Post Installation Instructions

After all of the above steps, make sure that you have the directory

```
X:\GTK\lib\pkgconfig
```

It should contain many files with `.pc` extensions. If not, something went wrong.

You need to create an environment variable so that the `pkg-config` program knows where the above directory is located. Although the following steps do not seem logically necessary, when I tried skipping them, I had problems, so I suggest just following the instructions blindly. Open a command window, (e.g., `cmd.exe`) and type the following three commands:

```
cd X:\GTK\lib

explorer .

set PKG_CONFIG_PATH=X:\GTK\lib\pkgconfig
```

To check that your setup is successful, open an MSYS window by double-clicking the MSYS icon that was placed on your desktop, and type

```
pkg-config gtk+-2.0  --cflags –libs
```

The output should be like the following, with the `'c:'` replaced by the hard drive volume letter you used.

```
-mms-bitfields     -Ic:/GTK/include/gtk-2.0     -Ic:/GTK/lib/gtk-
2.0/include    -Ic:/GTK/include/atk-1.0    -Ic:/GTK/include/cairo
-Ic:/GTK/include/pango-1.0              -Ic:/GTK/include/glib-2.0
-Ic:/GTK/lib/glib-2.0/include         -Ic:/GTK/include/freetype2
-user32 -Wl,-luuid -Lc:/GTK/lib -lgtk-win32-2.0 -lgdk-win32-2.0
-lgdi32  -limm32  -lshell32  -lole32  -latk-1.0  -lgdk_pixbuf-2.0
-lpangowin32-1.0     -lpangocairo-1.0     -lcairo     -lpangoft2-1.0
-lfontconfig  -lfreetype  -lz  -lpango-1.0  -lm  -lgobject-2.0
-lgmodule-2.0 -lglib-2.0 -lintl -liconv
```

For an explanation of what this output actually means, see my notes on *gcc*. If you get any output such as

```
Package gtk+-2.0 was not found in the pkg-config search path.
Perhaps you should add the directory containing `gtk+-2.0.pc' to
the PKG_CONFIG_PATH environment variable No package 'gtk+-2.0'
found
```

then you have a problem that has to be solved. You should check the value of the environment variable in the DOS prompt and also in an MSYS window. It should point to the directory to which you set it. If it does not, repeat the above steps again, exactly as I have written them.