

## Re: PIC/Linux

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*Source:* <http://sci.tech-archive.net/Archive/sci.electronics.misc/2006-11/msg00061.html>

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- *From:* Allan Adler <ara@xxxxxxxxxxxxxxxxxxxxxx>
  - *Date:* 10 Nov 2006 22:33:30 -0500
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Frank-Christian Kruegel writes:

On 10 Nov 2006 00:00:59 -0500, Allan Adler <ara@xxxxxxxxxxxxxxxxxxxxxx> wrote:

<http://www.linuxjournal.com/article/7289>  
<http://cdk4avr.sourceforge.net/>  
<http://www.tuxgraphics.org/electronics/200411/article352.shtml>  
Mit freundlichen Gruessen

Since I don't possess an AVR and don't know yet exactly what to get, I think I need to try to figure out which of these tgz files to open and explore. For example, cdk-abr-simulavr-0.1.2.2-20060709.tgz, by its name, sounds as though it will let me simulate the AVR without actually having one.

Exactly.

That's encouraging. I have now untarred it and learned that, even if it can run without an AVR, it apparently can't run without the rest of the software. Now that I have a lot of the packages, I'm going back and trying to download some of the documentation. Some of it is in German and I've made an attempt to read it. Ich spreche jetzt sehr schlecht Deutsch, aber ich kann es sehr langsam lesen. Dass is sehr gut weil es is besser die Dokumentation langsam zu lesen. I don't normally have the patience to do so in English.

The third link, to tuxgraphics.org, is fairly specific about binutils-2.15, while I have binutils-2.10, and gcc-core-3.42, while I have gcc-2.96.

You've got gcc-2.96 for x86. For AVR programming you'll need tools for AVR. So just do what they write, download these files and compile them.

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OK, the first thing they say to do is:

```
mkdir /usr/local/avr
mkdir /usr/local/avr/bin
export PATH=/usr/local/avr/bin:${PATH}
```

I'm very picky about what I install on my machine and where I install it. When I'm installing something like this, I prefer to keep it in my user directories, instead of on the system as a whole. That makes it a lot easier for me to back up my system and also a lot easier for me to remove it in case I decide I don't like having it. (The other link having directions <http://www.linuxjournal.com/article/7289> seems to agree with the tuxgraphics site on this point.)

So, I'm going to pretend they didn't tell me to do that, but I'll keep in mind that I may eventually need to create some directories and put one of them in my path.

Now let's look at the GNUbinutils instructions:

```
tar jxvf binutils-2.15.tar.bz2
cd binutils-2.15/
mkdir obj-avr
cd obj-avr
.../configure --target=avr --prefix=/usr/local/avr --disable-nls
make
```

```
# as root:
make install
```

Since I'm going to put this in my private directories, I won't need to be root to do the installation. Also, I downloaded the tgz version of binutils, not the tar.bz2 version. So I have to do this differently from what they say to do. Actually, I don't know where the directory binutils-2.15 is supposed to live. I guess I can put it wherever I like. I'll just stick it in my directory ~/AVR/LINUX as /AVR/LINUX/binutils-2.15. Now, where is the varmint? Actually, it was cdk-avr-binutils-2.16.1-20060708.tgz and when I untarred it in ~/AVR/LINUX it created various subdirectories of ~/AVR/LINUX/opt and that is consistent with that the second link:

<http://cdk4avr.sourceforge.net>

(which is where I downloaded all the stuff from) said would happen. So, maybe I don't need to create anything even remotely resembling a binutils-2.15 directory. But let's see: I'm still trying to follow the 3rd link:

<http://www.tuxgraphics.org/electronics/200411/article352.shtml>

and it does have something to say about creating a subdirectory of the binutils-2.15 I was supposed to create and cd'ing to it in order to run configure and make. So, where should I go? Well, probably to wherever the configure program is, i.e. in .. of the mythical directory obj-avr, which was created as a subdirectory of the mythical directory binutils-2.15, i.e. configure should be in the directory binutils-2.15. Wherever it is, since I untarred the file cdk-avr-binutils-2.16.1-20060708.tgz in the

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directory ~/AVR/LINUX, this file configure which I'm going to execute as ./configure ought to be in \*some\* subdirectory of ~/AVR/LINUX. But when I execute

```
ls -R | grep configure
```

in ~/AVR/LINUX there is no mention of any such file named configure.

So, it appears that I can't take the next step and I would not have been able to take this next step even if I had untarred the file inside some subdirectory of /usr/local/avr or some other subdirectory of /usr. And then I would have had a mess to clean up, so now I'm really glad I didn't follow the directions blindly.

Actually, a lot of the files that have turned up in subdirectories of ~/AVR/LINUX/opt have turned out to be executables. So, maybe there is no make process involved. Maybe what I have downloaded is binaries and I just have to use them. For example, from the simulavr package, I wound up with three files in the subdirectory ~/AVR/LINUX/opt/cdk4avr/bin, namely simulavr simulavr-disp simulavr-vcd

and I was able to run them, except for not having anything else that they needed to run. So, I'm going to proceed on the theory that I should ignore most of the instructions I find on the pages:

<http://www.tuxgraphics.org/electronics/200411/article352.shtml>

<http://www.linuxjournal.com/article/7289>

even though their selection of topics is probably quite useful. The problem is that the 3 pages contradict each other in fundamental ways, but I now have some sense of what to believe and what to disregard.

After I've experimented with this for a while, I'll have a better idea of what I know, what I don't know, when I knew it and what I wish I had known. As that process can be quite verbose, and not very interesting, I'll stop reporting on it until I have something more definite to say.

I guess you are not very familiar with the Linux/Unix development environment. This would help you in getting started with AVR, since the tools are basically the same.

I'm certainly not an expert on Linux/Unix, but I'm not as feeble as I seem to have made you think. It's more accurate to say that I'm not extremely good at guessing what is going on by reading the names of the distribution tgz files instead of the documentation. In particular, I don't know yet which files refer to the target machine and which refer to my x86 but I expect to know soon.

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Ignorantly,

Allan Adler <ara@xxxxxxxxxxxxxxxxxxxx>

\* Disclaimer: I am a guest and \*not\* a member of the MIT CSAIL. My actions and \* comments do not reflect in any way on MIT. Also, I am nowhere near Boston.

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