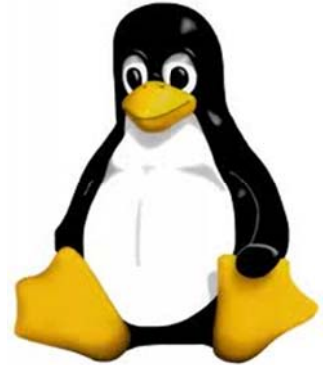


Linux and other FOSS in embedded systems

By Anders Törnqvist

Today few people have missed the fact that Linux exists and what it is.

Primarily for embedded systems there has been a major change towards using Linux and other FOSS (Free and Open Source Software) as a base. We can find embedded products using Linux in all market segments such as industrial automation, telco, defense electronics, consumer electronics and security.



During the last years Linux has also entered the embedded products in automotive and med-tech segments where the requirements are tougher.

And, is there anybody that has missed all the Android phones and gadgets that are based on an embedded Linux platform?

How come this vast change to use Linux in embedded systems?

10 years ago there were very few such products and now Linux has become some kind of de-facto standard.

Some reasons are:

- Mature system design
- Good stability
- Linux is FOSS
- Large hardware support
- Adaptable
- No license costs

Linux was from the beginning in 1991 developed with desktop computers in mind. But at the same time to be very configurable, scalable and adaptable. The system tools and much of the basic designs are based on FOSS solutions and best practice from different Unix systems dating back to the late 1970s.

Tools and Linux itself have then matured and the facts that the source code to it all is available and easy to change for different requirements are good reasons for the entry of Linux in embedded systems.

Now Linux has been ported to most of the CPU architectures that exist and the component vendors most often develop new drivers for their new chips.

When you today are to design a new embedded product you can chose from a wide variety of hardware solutions and will most probably find some Linux support for it.

Few other OS alternatives give you such a quick start of a development project as Linux do.

Linux is FOSS and means that it is developed with a free mindset, meaning that the code is freely available and shall continue to be so.

You can use it, build embedded products around it and other FOSS components. You can adapt it and in a system combine it with your own code. But, you must carefully read and understand the rules and regulations for all different code packages used because there are important obligations that you must follow. These can be acknowledgements and redistribution of changed code. Know what you do before doing it.

Over the years the eco-system for Linux, tools and applications has become extremely large and for a newbie can be overwhelming and for the more experienced developer a great toolbox.

A key to success with your embedded development project based on Linux is to have the appropriate knowledge.

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