



Mastering Embedded Linux Programming

Chris Simmonds

Download now

[Click here](#) if your download doesn't start automatically

Mastering Embedded Linux Programming

Chris Simmonds

Mastering Embedded Linux Programming Chris Simmonds

Key Features

- Create efficient and secure embedded devices using Linux
- Minimize project costs by using open source tools and programs
- Explore each component technology in depth, using sample implementations as a guide

Book Description

Mastering Embedded Linux Programming takes you through the product cycle and gives you an in-depth description of the components and options that are available at each stage. You will begin by learning about toolchains, bootloaders, the Linux kernel, and how to configure a root filesystem to create a basic working device. You will then learn how to use the two most commonly used build systems, Buildroot and Yocto, to speed up and simplify the development process. Building on this solid base, the next section considers how to make best use of raw NAND/NOR flash memory and managed flash eMMC chips, including mechanisms for increasing the lifetime of the devices and to perform reliable in-field updates. Next, you need to consider what techniques are best suited to writing applications for your device. We will then see how functions are split between processes and the usage of POSIX threads, which have a big impact on the responsiveness and performance of the final device. The closing sections look at the techniques available to developers for profiling and tracing applications and kernel code using perf and ftrace.

What you will learn

- Understand the role of the Linux kernel and select an appropriate role for your application
- Use Buildroot and Yocto to create embedded Linux systems quickly and efficiently
- Create customized bootloaders using U-Boot
- Employ perf and ftrace to identify performance bottlenecks
- Understand device trees and make changes to accommodate new hardware on your device
- Write applications that interact with Linux device drivers
- Design and write multi-threaded applications using POSIX threads
- Measure real-time latencies and tune the Linux kernel to minimize them

About the Author

Chris Simmonds is a software consultant and trainer who lives in southern England. He has been using Linux in embedded systems since the late 1990s, during which he has worked on many interesting projects, including a stereoscopic camera, intelligent weighing scales, various set-top boxes and home routers, and even a large walking robot.

He is a frequent presenter at open source and embedded conferences, including the Embedded Linux Conference, Embedded World, and the Android Builders' Summit. He has been conducting training courses and workshops in embedded Linux since 2002 and in embedded Android since 2010. He has delivered hundreds of sessions to many well-known companies. You can see some of his work on the "Inner Penguin" blog at www.2net.co.uk.

Table of Contents

1. Starting Out
2. Learning About Toolchains
3. All About Bootloaders
4. Porting and Configuring the Kernel
5. Building a Root Filesystem
6. Selecting a Build System
7. Creating a Storage Strategy
8. Introducing Device Drivers
9. Starting up - the init Program
10. Learning About Processes and Threads
11. Managing Memory
12. Debugging with GDB
13. Profiling and Tracing
14. Real-time Programming

 [Download Mastering Embedded Linux Programming ...pdf](#)

 [Read Online Mastering Embedded Linux Programming ...pdf](#)

Download and Read Free Online Mastering Embedded Linux Programming Chris Simmonds

From reader reviews:

Roy Brown:

Book is definitely written, printed, or illustrated for everything. You can realize everything you want by a publication. Book has a different type. As it is known to us that book is important issue to bring us around the world. Beside that you can your reading talent was fluently. A publication Mastering Embedded Linux Programming will make you to end up being smarter. You can feel considerably more confidence if you can know about anything. But some of you think in which open or reading any book make you bored. It is not necessarily make you fun. Why they could be thought like that? Have you searching for best book or suitable book with you?

Christa Nisbet:

Reading can called mind hangout, why? Because if you find yourself reading a book particularly book entitled Mastering Embedded Linux Programming your mind will drift away trough every dimension, wandering in each aspect that maybe not known for but surely will end up your mind friends. Imaging every single word written in a publication then become one type conclusion and explanation which maybe you never get before. The Mastering Embedded Linux Programming giving you yet another experience more than blown away your mind but also giving you useful info for your better life with this era. So now let us demonstrate the relaxing pattern this is your body and mind will be pleased when you are finished looking at it, like winning a game. Do you want to try this extraordinary shelling out spare time activity?

Donna Hubbard:

In this age globalization it is important to someone to acquire information. The information will make you to definitely understand the condition of the world. The healthiness of the world makes the information simpler to share. You can find a lot of recommendations to get information example: internet, paper, book, and soon. You can view that now, a lot of publisher in which print many kinds of book. Typically the book that recommended to you is Mastering Embedded Linux Programming this publication consist a lot of the information of the condition of this world now. This kind of book was represented so why is the world has grown up. The language styles that writer use to explain it is easy to understand. The writer made some analysis when he makes this book. This is why this book acceptable all of you.

Keely Charles:

Do you like reading a reserve? Confuse to looking for your best book? Or your book has been rare? Why so many question for the book? But almost any people feel that they enjoy with regard to reading. Some people likes looking at, not only science book but also novel and Mastering Embedded Linux Programming as well as others sources were given expertise for you. After you know how the great a book, you feel need to read more and more. Science guide was created for teacher or students especially. Those textbooks are helping them to add their knowledge. In some other case, beside science reserve, any other book likes Mastering Embedded Linux Programming to make your spare time a lot more colorful. Many types of book like this.

**Download and Read Online Mastering Embedded Linux
Programming Chris Simmonds #X3FBJGWL6HV**

Read Mastering Embedded Linux Programming by Chris Simmonds for online ebook

Mastering Embedded Linux Programming by Chris Simmonds Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Mastering Embedded Linux Programming by Chris Simmonds books to read online.

Online Mastering Embedded Linux Programming by Chris Simmonds ebook PDF download

Mastering Embedded Linux Programming by Chris Simmonds Doc

Mastering Embedded Linux Programming by Chris Simmonds Mobipocket

Mastering Embedded Linux Programming by Chris Simmonds EPub