



Essential Linux Device Drivers

A Must-have for Intermediates



Have you ever opened your drivers/ directory that contains the single largest group of files? Have you ever wondered how the driver assists the kernel in communicating with your hardware? This book will inform you through a guided survey of these files.

Sreerkrishnan Venkateswaran, who holds a master's degree in computer science from the Indian Institute of Technology, Kanpur, has exhibited his profound knowledge and experience with Linux in the book *Essential Linux Device Drivers*, which comes under the 'Open Source Software Development Series' of Prentice Hall. The book covers a wide range of sub-topics, with special reference to modern PCs and embedded hardware, such as PCMCIA, USB, I²C, video, audio, Flash memory and wireless communications.

The book vividly covers the 2.6 kernels. The first few chapters prepare you for the take-off. Chapters

like *A Peek Inside the Kernel* and *Laying the Groundwork* elucidate the scope and direction of the book. With *Serial Drivers*, the book starts explaining about the kernel layer that handles serial devices. By reading the first few chapters, you will learn some must-know concepts about the kernel.

The book reads more like a reference guide when it handles drivers for devices such as EEPROMs that are connected to a system's I²C bus (or SMBus) (which is covered under *The Inter-Integrated Circuit Protocol*), and the information regarding drivers for storage devices (say for HDD) is covered in block drivers. The book has separate chapters that deal with video and audio drivers.

Essential Linux Device Drivers

Prentice Hall
Open Source Software Development Series

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“Writing a book is excruciating, yet exciting.”

An interview with the author

Q. What prompted you to write a book?

Prentice Hall's editor-in-chief for open source publishing happened to read a few of my kernel columns in Linux Magazine and asked me if I would be interested in writing a book on Linux internals.

Q. Why go for a topic like device drivers for Linux?

I felt that a Linux device driver book would be very relevant today, given the soaring popularity of Linux in the embedded space, where you encounter a whole lot of unconventional hardware interfaces. The development of new device drivers in the kernel is accelerating steadily with the advent of new and diverse technologies in popular form factors. In fact, among the different sub-systems residing in the kernel source tree, the drivers/ directory constitutes the single largest chunk and is several times bigger than the others.

I sensed that choosing to write on device drivers would give me an opportunity to produce a unique book if I covered embedded-centric

interfaces such as PC cards, Flash memory, audio, video, I2C, SPI, input, Bluetooth, and Wi-Fi, in addition to the standard device classes and I/O buses that other driver books talk about.



Sreekrishnan Venkateswaran

Q. What's the response been like from those who've reviewed it?

Pretty good so far. Alan Cox, Ted Ts'o, and several other frontline kernel developers have written to tell me that they like the book. I'm looking forward to responses from LINUX For You readers as well. I can factor feedback into re-prints and any future editions.

I've set up a companion website at elinuxdd.com that contains reviews, sample chapters, updates, and other information related to the book.

Q. By what time do you expect it to hit India? How much does it cost internationally and at what price do you expect it to retail in India?

According to the publisher, the Indian edition will be out before October and will be priced at around Rs 500. The US edition has a list price of \$44.99. Amazon ships the US edition all over the world, including India.

Q. Any tips or thoughts for our readers who may want to write a book too?

Writing a book is excruciating, yet exciting. It's tough because of the long hours it consumes daily, but exhilarating because you get to learn a lot, both on the technical and publishing fronts. So I would recommend writing one book for sure. :-)

—LFY Bureau


Linux Without Wires is well written and covers Bluetooth, Infrared, Wi-Fi, and cellular communication network interface cards. It will lure every programmer to try some experiments while reading this segment.

Embedding Linux highlights the expertise of the author in the field. *More Devices and Drivers* is a part that I enjoyed very much. The topics are detailed in a superb way. I do admit that no book that I have ever read, covered these two topics in a better way. *Debugging Device Drivers* deals with different types of debuggers that you can use to debug the code.

Further, the author has set up a site (<http://elinuxdd.com>) to offer support to the readers of his book. Though the author has tested the coding on a 2.6.23 kernel, it works well with other versions also (in fact, I use an old version). In short, intermediate users can easily learn the art of writing Linux device drivers.

This book deserves to be there on your reference rack and the author, who has the experience of porting Linux to various embedded devices such as a wristwatch, music player, VoIP phone, pacemaker, remote patient monitoring system, etc, has elucidated the topics in the

most lucid way.

If you are proficient in C, you just can't put down the book after reading a few chapters. Even for advanced level programmers, the book is a good asset. The interactive nature used in the book is commendable. This book is a must-have!  END

By: Aasis Vinayak PG. The author is a hacker and a free software activist who does programming in the open source domain. He is the developer and CEO of the Mozhi Search engine. His research work/publications are available at www.aasisvinayak.com