Hands-On System Programming with Linux, Kaiwan N Billimoria
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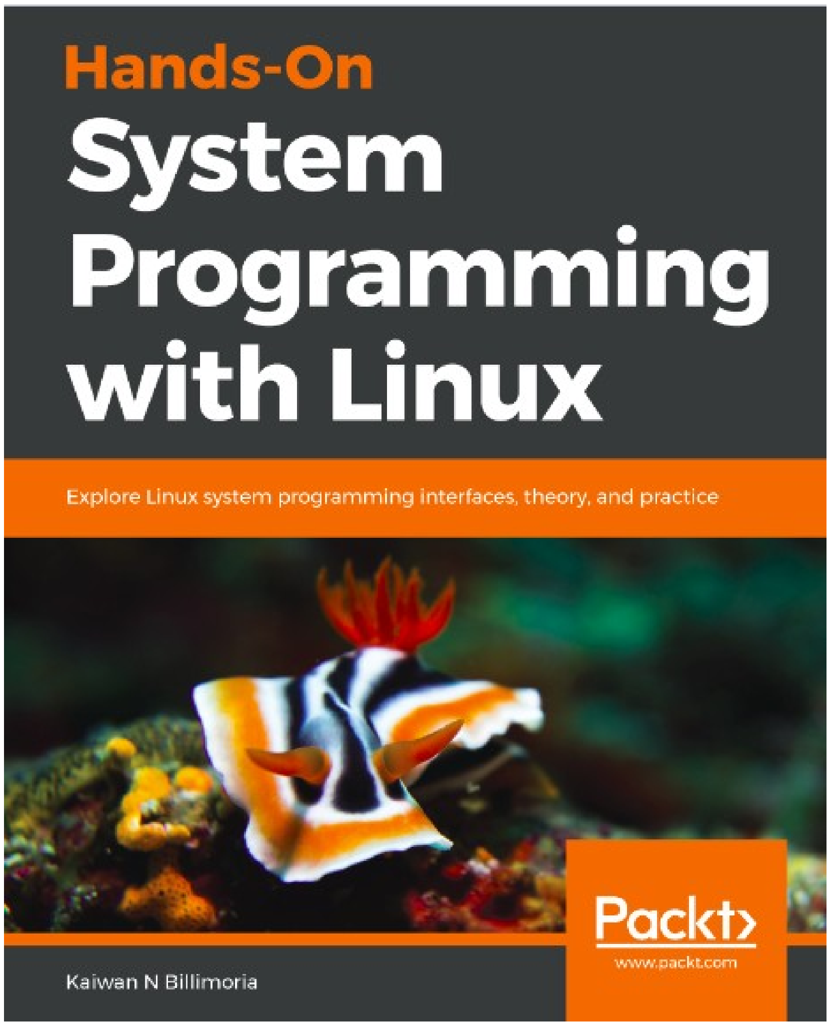
Hands-On
System Programming with Linux
Explore Linux system programming interfaces, theory, and practice
Packt>
www.packt.com
Kaiwan N Billimoria

Book Description

The Linux OS and it's embedded and server applications are a critical component of today's key software infrastructure in a decentralized, networked universe. The industry demand for proficient Linux developers is only rising. This book aims to give the reader two things: a solid theoretical base and practical industry-relevant descriptions and code covering the Linux system programming domain. It delves into the art and science of Linux application programming - system architecture, process memory and management, signalling, timers, pthreads, file IO, shared libraries, and more.

This book attempts to go beyond the "use API X to do Y" approach; it takes pains to explain the concepts and theory required to understand the programming interfaces, the design decisions and tradeoffs made by experienced developers when using them and the rationale behind them. Troubleshooting tips and techniques round out the book's coverage.

By the end of this book, you will have both the essential conceptual design knowledge and hands-on experience working with Linux system programming interfaces.

What You Will Learn

- A solid grasp on the key theoretical underpinnings of the UNIX and Linux system architecture
- The what and why of modern OS's using Virtual Memory, dynamic memory APIs
- Process Management: concepts and APIs on process credentials, execution, creation, signalling
- How to effectively perform file IO, and use timers
- Multithreading: concepts and APIs on pthreads creation, management, cancellation, synchronization in detail

- Linux's CPU scheduling policies and how to exploit them via their API set
- Build and work with daemon processes
- How to effectively troubleshoot.

Amazon Reviews

- 5.0 out of 5 stars **approach to understand various basic programming concepts**

13 Dec

Format: Kindle Edition

This book is first of its kind to understand various programming techniques through best suitable coding practices. More importantly it reveals various OS concepts and underlying techniques of handling user space applications. It includes debugging techniques, trouble shooting and tracing tools etc which helps to understand and avoid common programming mistakes as well as helps to write well performing codes. This book is a best option to understand many important OS concepts like process, thread, CPU scheduling and signalling etc. Personally it helped me to get clarity in various operating system concepts and understand best programming practices.

- 5.0 out of 5 stars **ls on book for a linux geek**

10 Dec

Format: Kindle Edition

Covers fundamentals & key aspects – systems programming at the library and system call layers. Most important is that it covers the "why" and with a hands-on approach of the "how". Throughout the book there are useful real work examples. Deep dive into various key topics like Virtual Memory, memory debug tools like (valgrind, sanitizers), rules of fork(), cpu scheduling and much more. I highly recommend this book for linux programmers who want take a deep dive into linux system programming.

- 5.0 out of 5 stars **ands on.**

16 Janu

Format: Kindle Edition

A well organized book in system programming with Linux at library & system calls.
Talks about architecture, memory, signal, process, multi-threads, timers, file i/o.
Crisp and clear explanation with test codes, expected output, and explanation related the system behavior.
The example codes used are very well explained and in sync to understand the concepts easily.
This book has become a quick reference guide for me now.

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Authors

Kaiwan Billimoria

Kaiwan Billimoria taught himself BASIC programming on his Dad's office IBM PC when he was in the 9th grade (back in 1983). The urge to learn, hack and master at the level of the "bare-metal" was born there!

After completing his B.E. in Information Science & Tech, he went to work: helping build an antivirus product using assembly and C on a DOS platform. He thought DOS was awesome, until one fateful day he "discovered" the joys of Unix! (from none other than Richard Steven's iconic original "UNIX Network Programming" book and working on 'C' applications on SCO Unix). Many years later, working on the creative side (multimedia, web design, HTML), he "re-discovered" Free Unix on the PC - in the form of Linux of course.

Kaiwan has plumbed the depths of the Linux system programming stack – right from mastering bash scripting, to system programming in userspace with 'C', to deep OS-level kernel internals hacking and debugging. Along the way, he has worked on several commercial and opensource products and projects. His (opensource) contributions include drivers for the mainline Linux OS, and several small self-founded projects hosted on GitHub. He is currently working on and looking to actively contribute in the Linux OS kernel hardening and security space.

His passion for Linux and actively programming on it by working on industry and opensource projects and products, feeds well into his other passion – for two decades now, Kaiwan has been teaching engineers the intracacies of the Linux OS, and how to design and implement code (for robustness and security).

It doesn't hurt that he is an ultra-marathoner too (several marathons, a few 50k's and a memorable 100 km run).