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## The Linux Programming Interface: A Linux And UNIX System Programming Handbook

# THE LINUX PROGRAMMING INTERFACE

A Linux and UNIX" System Programming Handbook

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#### Synopsis

The Linux Programming Interface (TLPI) is the definitive guide to the Linux and UNIX programming interface  $\hat{A}$   $\hat{c} \hat{a} - \hat{a}$  •the interface employed by nearly every application that runs on a Linux or UNIX system. In this authoritative work, Linux programming expert Michael Kerrisk provides detailed descriptions of the system calls and library functions that you need in order to master the craft of system programming, and accompanies his explanations with clear, complete example programs. You'll find descriptions of over 500 system calls and library functions, and more than 200 example programs, 88 tables, and 115 diagrams. You'll learn how to:A¢â ¬â œRead and write files efficiently  $\tilde{A}\phi \hat{a} \neg \hat{a} \oplus U$ se signals, clocks, and timers  $\tilde{A}\phi \hat{a} \neg \hat{a} \oplus C$ reate processes and execute programsââ  $\neg$ ⠜Write secure programsââ  $\neg$ â œWrite multithreaded programs using POSIX threadsâ⠬⠜Build and use shared librariesâ⠬⠜Perform interprocess communication using pipes, message queues, shared memory, and semaphores  $\hat{A}\phi\hat{a} - \hat{a}\phi$  Write network applications with the sockets APIWhile The Linux Programming Interface covers a wealth of Linux-specific features, including epoll, inotify, and the /proc file system, its emphasis on UNIX standards (POSIX.1-2001/SUSv3 and POSIX.1-2008/SUSv4) makes it equally valuable to programmers working on other UNIX platforms. The Linux Programming Interface is the most comprehensive single-volume work on the Linux and UNIX programming interface, and a book that's destined to become a new classic.

#### **Book Information**

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#### **Customer Reviews**

Michael Kerrisk has been using and programming UNIX systems for more than 20 years, and has taught many week-long courses on UNIX system programming. Since 2004, he has maintained the man-pages project (http://www.kernel.org/doc/man-pages/), which produces the manual pages describing the Linux kernel and glibc programming APIs. He has written or co-written more than 250 of the manual pages and is actively involved in the testing and design review of new Linux kernel-userspace interfaces. Michael lives with his family in Munich, Germany.

Technical books are not all useful. Especially today, when in a few clicks tons of forums and articles may answer most questions. The LPI is remarkably valuable because in 1500 pages it covers most system programming areas (more than 60) in Linux in a logical and evolutionary manner. Explanations are deep and lengthy. The author knows what he talks about, and doesn't take refuge in vagueness (many authors do when a topic is particularly difficult). The LPI is a useful book to have as a programmer, or anybody interested in [Linux] systems. Searching the book is a first step, the most important, when addressing a topic. An example of what I like from the book:in "Threads: further details" the author addresses a particular scenario where a fork() is called within a multithreaded process. He gives warnings and recommendations. Doing a fork() there is the kind of trap many people may fall into, leading to race conditions and other very hard to debug problems that occur randomly.

This book is excellent, a complete UNIX/LINUX system programming reference! Let me preface this review with the comment that I use PC-BSD 10.1.1 p20, Solaris 11.2, and Ubuntu 14.04.2 LTS as my platforms. I have only one suggestion for those programmers that want to use this book on systems other than LINUX.If you use the make file at the top level download directory of the book or dist source code, it is successful in compiling all of the source in each chapter on a LINUX system at one time. That's what happened on my Ubuntu 14.04.2 LTS, as of the tarball available at the book website on 4/24/15. But trying to compile the source on both PC-BSD 10.1.1 p20 or Solaris 11.2 proved to be an insurmountable task for me. If you follow the author's excellent instructions for compiling on systems other than LINUX, you may have better luck than me.All in all, a very complete SUSv4/ POSIX -compliant reference, and well organized too!Update 9/27/2015-Successfully compiled the source tarball on Ubuntu 15.04 using Method B in the BUILDING.html file at the book website. Had to apt-get gcc on my server edition first. Then went to each sub-directory of interest and used make to compile. Beautiful!

I've been doing Linux systems programming nearly my entire career (16 years so far...), and this is the most valuable resource I've found. This goes WAY beyond the manual pages available online.Before owning book, I used the Stevens Advanced Unix Programming book for years. This is definitely a step up. It is more current (covering more recent specifications) and contains more detailed implementation information.The amount of detail and coverage of subjects completely surpassed my expectations.

TLPI is a book that will keep on giving. I received this book as a sophomore in college and excitedly read the first few chapters page for page. Kerrisk does an excellent job of writing in a way that exposes the way Linux APIs were meant to be used. There is a consistent and clear, though not too forceful, exposure of themes. You'll find that after a few months of working with this book the underlying Linux operating system calls become familiar in a way that upon running into a new problem you can almost guess what the system calls to get at the library you'll need look like.

The amount of detail in this book is godsend. This book is very well organised and presenting history of standards and naming makes learning much more easier. Instead of jumping right in and having to remember mystical looking names, the history gives the reader an understanding of where the names come from and one can derive and piece together information from there. I am a newbie to linux. I learned C from Deitels How to Program (AWESOME BOOK ALSO) and wanted to take my knowledge further. I did not know where to start really until picking up TCP/IP sockets in C. after getting through 25% percent of that I realized that I need a book on OS API because there were so many holes in the TCP/IP book. I was left wondering why this and why that. THIS BOOK, my friends is THE BOOK with the answers to your "whys". Great Book!

Essential.If you think about using C language on GNU/Linux, you need this.You can always access the man pages of every function, but this book will teach you how the system work, why things are this way, how it was in early UNIXES...

By far, this is the most interesting book I've read about the Linux operating system. It contains fantastic coverage of a wide range of topics at varying levels of detail. The writing style is very appealing and the details are wonderfully selected and presented. The many chapters allow the user to explore each domain to varying levels of depth and breadth. We have to thank the author (a leading contributor to Linux documentation) for having taken the time to produce it with such level of

attention and sensitivity to optimal organization. This is highly recommended for those who are looking for a book to learn about the details of Linux internals in a lucid and exciting style. I have a paper copy -- beautifully printed and covered -- and I look forward to purchase a kindle version, too . . .

Mr. Kerrisk did an amazing work in this book.I purchased this book one year ago, on July 2012, and since then it has served me pretty well. I can not count how many times I faced a technical doubt and I found a enlightening explanation in this book.This book covers almost all aspects of Linux low-level application programming: file I/O, IPC, process management and threads to name a few. Even being focused on user-space programming, this book has better explanations of file systems and sockets than most kernel programming books I've read.I read this book cover to cover and I can say I improved my Linux's knowledge close to 70%.

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