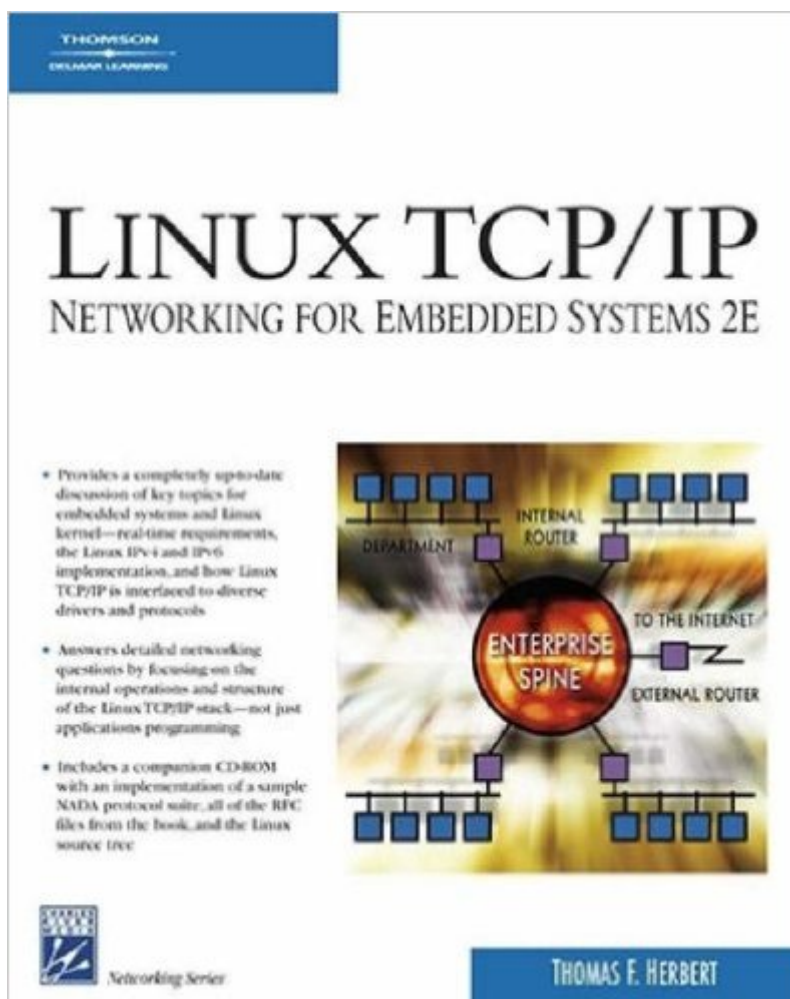# Linux TCP/IP Networking For Embedded Systems

Synopsis

The Linux TCP/IP Stack: Networking for Embedded Systems 2/E provides an updated, in-depth guide to implementing and using the Linux TCP/IP stack in embedded systems projects. It begins with a general overview of TCP/IP networking, with background information on applicable networking standards. From there, it details the TCP/IP implementation in Linux by following a packet of data as it flows through the stack from the sending system, out the wire, and back through the input side of the stack in the receiving machine. This unique approach gives programmers an inside look at the entire process. Throughout the text, topics of particular interest to engineers implementing embedded systems are discussed, such as sockets, network interfaces, application layer protocols, and practical considerations. This is a great resource for embedded systems programmers and engineers, as well as networking professionals interested in learning more about the implementation of Linux TCP/IP.

Book Information

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Customer Reviews

1, pg. 318. figure 7.2 - tcp_send_skb has been removed since 2.6.6, but it still appears in a book, which the author claims that it's based kernel 2.6.16.2, pg. 485. paragraph 2 - "this processing is done by tcp_v4_hnd_req" is not right, actually tcp_v4_hnd_req expects a SYN-ACK. If SYN comes, it does nothing.

I have been working in OS TCP stack over 6 years and I am very disappointed about the TCP part of this book. TCP is a complex protocol with tens of optimization extensions and tweaks. Different OS implementations vary significantly. It is essential to at least describe what RFCs Linux implements and its variations from the standards. I.e., give a global picture of the design and implementation philosophy of Linux TCP. For example, Linux implements the forward RTO RFC, but the author does not even mention it or cite the technical papers in TCP retransmissions. If you want to know indepth knowledge of Linux TCP, check the slight-outdated 10 page Linux Congestion Control paper, it provides more information than this book.

This is an in-depth guide to implementing and using the Linux TCP/IP stack. It begins with a general overview of TCP/IP networking, with background information on applicable networking standards. From there, it details the TCP/IP implementation in Linux by following a pack of data as it flows through the stack from the sending system, out the wire, and back through the input side of the stack in the receiving machine. This unique approach gives programmers an inside look at the entire process.The book is aimed at the engineers and programmers implementing dedicated or embedded systems including sockets, network interfaces, application protocols and practical considerations. This is an intermediate level book. Some programming experience is all but required, as is some background in LinuxThe CD included with the book includes the source code developed in the book, much of which can be modified to fit many quasi-standard applications, and a considerable amount of additional technical information on Linux and the particular aspects of TCP/IP. It also includes an implementation of a sample NADA protocol suite.

This book is really nothing about embedded systems and all about the Linux networking stack. There is the offhanded remark about how something that is mentioned might apply to an embedded system, but the title of the book is really misleading. The book covers the network stack from device driver up to the socket layer and does a fair job with more details than any other current book on the subject matter (i've looked at them all as of Dec 07).Reading the book it does seem like there wasn't much editing: It's easy to spot a typo every couple of pages (some times there is a completely duplicated paragraph); I've seen a couple of mistakes and the writing is quite repetitive at times. Additionally, it seems like some content was shifted around at the very last minute which is odd for the second edition of the book.Even with it's flaws I think it does a better job than most. The only real contender is Linux Networking Architecture which in my opinion is better written and clearer,

however in some areas (notably the transport layer) it's more brief. I would rather have an expanded edition of that book that went into more details, but this does a reasonable job.

The Linux TCP/IP Stack: Networking for Embedded Systems (Networking Series) LINUX: Linux Command Line, Cover all essential Linux commands. A complete introduction to Linux Operating System, Linux Kernel, For Beginners, Learn Linux in easy steps, Fast! A Beginner's Guide Linux TCP/IP Networking for Embedded Systems Linux: Linux Guide for Beginners: Command Line, System and Operation (Linux Guide, Linux System, Beginners Operation Guide, Learn Linux Step-by-Step) Linux: Linux Mastery. The Ultimate Linux Operating System and Command Line Mastery (Operating System, Linux) TCP/IP Embedded Internet Applications (Embedded Technology) Linux for Embedded and Real-time Applications, Third Edition (Embedded Technology) Linux for Embedded and Real-time Applications (Embedded Technology) Linux for Embedded and Real-time Applications, Second Edition (Embedded Technology) TCP/IP Lean: Web Servers for Embedded Systems (2nd Edition) TCP/IP Lean: Web Servers for Embedded Systems (Book and CD-Rom Edition) Applied Control Theory for Embedded Systems (Embedded Technology) DSP Software Development Techniques for Embedded and Real-Time Systems (Embedded Technology) Design Patterns for Embedded Systems in C: An Embedded Software Engineering Toolkit Analog Interfacing to Embedded Microprocessor Systems, Second Edition (Embedded Technology Series) Real-Time UML Workshop for Embedded Systems, Second Edition (Embedded Technology) Embedded Systems Architecture: A Comprehensive Guide for Engineers and Programmers (Embedded Technology) Guide to Parallel Operating Systems with Windows 7 and Linux (Networking) Networking Self-Teaching Guide: OSI, TCP/IP, LANs, MANs, WANs, Implementation, Management, and Maintenance Guide to TCP/IP (Networking (Course Technology))