

UNIX Network Programming Vol 1: Networking APIs Sockets And XTI

This book analyzes the application of the legal principle of non-discrimination in the context of energy network operation. Since the early 1990s, the duty not to discriminate has applied to energy network operators, in order to achieve a liberalized European consumers have a free and real choice of energy supplier. The book provides guidance to those working in the context of the non-discrimination obligation, such as energy network operators, regulatory authorities, national courts, and other energy market participants for (academic) research purposes. The book's conclusions serve as a tool for critical consideration and offer suggestions for improvements to the legal framework and its application on a European, as well as a national, level. Several questions are answered by energy network operators have a non-discrimination obligation in the context of energy market liberalization, how European law has tried to remove and control the discrimination problem since the early 1990s, and when different treatment of energy network users amount to discrimination. The book's conclusions are underpinned by comparisons with competition law, public procurement law, and telecommunications law, as well as a case study on how energy network operators and regulators in several Member States currently interpret and apply the law. (Series: Energy & Law - Vol. 15)

Well-implemented interprocess communications (IPC) are key to the performance of virtually every non-trivial UNIX program. In UNIX Network Programming, Volume 2, Second Edition, legendary UNIX expert W. Richard Stevens presents a comprehensive guide to message passing, synchronization, shared memory, and Remote Procedure Calls (RPC). Stevens begins with a basic introduction to IPC and the problems it is intended to solve. Step-by-step you'll learn how to maximize both System V IPC and the new POSIX.4 improvements in convenience and performance.

Benvenuti describes the relationship between the Internet's TCP/IP implementation and the Linux Kernel so that programmers and advanced administrators can modify and fine-tune their network environment.

Learn to write advanced C programs that are strongly type-checked, compact, and easy to maintain. This book focuses on real-life applications and problem solving in networking, database development, compilers, operating systems, and CAD.

UNIX Network Programming: The sockets networking API

The ACE Programmer's Guide

UNIX System V Network Programming

44 Tips to Improve Your Network Programs

TCP/IP Illustrated

Unix Shell Programming

The Unix model; Interprocess communication; A network primer; Communication protocols; Berkeley sockets; System V transport layer interface; Library routines; Security; Time and date routines; Ping routines; Trivial file transfer protocol; Line printer spoolers; Remote command execution; Remote login; Remote tape drive access; Performance; Remote procedure calls.

This IBM® Redbooks® publication describes the functions of z/OS® Communications Server. z/OS Communications Server provides a set of communications protocols that support peer-to-peer connectivity functions for both local and wide-area networks,

including the most popular wide-area network, the Internet. z/OS Communications Server also provides performance enhancements that can benefit a variety of TCP/IP applications. z/OS Communications Server provides both SNA and TCP/IP networking protocols for z/OS. The SNA protocols are provided by VTAM® and include Subarea, Advanced Peer-to-Peer Networking, and High Performance Routing protocols. z/OS Communications Server exploits z/OS UNIX® services even for traditional MVSTM environments and applications. Prior to utilizing TCP/IP services, therefore, a full-function mode z/OS UNIX environment including a Data Facility Storage Management Subsystem (DFSMSdftp), a z/OS UNIX file system, and a security product (such as Resource Access Control Facility, or RACF®) must be defined and active before z/OS Communications Server can be started successfully. The ABCs of z/OS System Programming is a 13-volume collection that provides an introduction to the z/OS operating system and the hardware architecture. Whether you are a beginner or an experienced system programmer, the ABCs collection provides the information that you need to start your research into z/OS and related subjects. If you want to become more familiar with z/OS in your current environment, or if you are evaluating platforms to consolidate your e-business applications, the ABCs collection will serve as a powerful technical tool. The contents of the volumes are as follows: Volume 1: Introduction to z/OS and storage concepts, TSO/E, ISPF, JCL, SDFS, and z/OS delivery and installation Volume 2: z/OS implementation and daily maintenance, defining subsystems, JES2 and JES3, LPA, LNKLST, authorized libraries, SMP/E, Language Environment® Volume 3: Introduction to DFSMS, data set basics storage management hardware and software, catalogs, and DFSMSStvs Volume 4: Communication Server, TCP/IP, and VTAM Volume 5: Base and Parallel Sysplex®, System Logger, Resource Recovery Services (RRS), global resource serialization (GRS), z/OS system operations, automatic restart management (ARM), Geographically Dispersed Parallel Sysplex™ (GDPS®) Volume 6: Introduction to security, RACF, Digital certificates and PKI, Kerberos, cryptography and z990 integrated cryptography, zSeries® firewall technologies, LDAP, and Enterprise identity mapping (EIM) Volume 7: Printing in a z/OS environment, Infoprint Server and Infoprint Central Volume 8: An introduction to z/OS problem diagnosis Volume 9: z/OS UNIX System Services Volume 10: Introduction to z/Architecture®, zSeries processor design, zSeries connectivity, LPAR concepts, HCD, and HMC Volume 11: Capacity planning, performance management, RMFTM, and SMF Volume 12: WLM Volume 13: JES3

Increasingly, robots are being used in environments inhospitable to humans such as the deep ocean, inside nuclear reactors, and in deep space. The techniques used to control these robots are the subject of this book. The author begins with a basic introduction to robot control and covers topics such as teleprompting, operator interfaces, visual imagery, and command generation. Additionally, problematic issues are addressed, including noisy control lines, feedback and response information, and predictive displays.

Apply business requirements to IT infrastructure and deliver a high-quality product by understanding architectures such as microservices, DevOps, and cloud-native using modern C++ standards and features Key Features Design scalable large-scale applications with the C++ programming language Architect software solutions in a cloud-based environment with continuous integration and continuous delivery (CI/CD) Achieve architectural goals by leveraging design patterns, language features, and useful tools Book Description Software architecture refers to the high-level design of complex applications. It is evolving just like the languages we use. Modern C++ allows developers to write high-performance apps in a high-level language without sacrificing readability and maintainability. If you're working with modern C++, this practical guide will help you put your knowledge to work and design distributed, large-scale apps. You'll start by getting up to speed with architectural concepts, including established patterns and rising trends. The book will then explain what software architecture is and help you explore its components. Next, you'll discover the design concepts involved in application architecture and the patterns in software development, before going on to learn how to build, package, integrate, and deploy your components. In the concluding chapters, you'll explore different architectural qualities, such as maintainability, reusability, testability, performance, scalability, and security. Finally, you will get an overview of distributed systems, such as service-oriented architecture, microservices, and cloud-native, and understand how to apply them in application development. By the end of this book, you'll be able to build distributed services using modern C++ and associated tools to deliver solutions as per your clients' requirements. What you will learn Understand how to apply the principles of software architecture Apply design patterns and best practices to meet your architectural goals Write elegant, safe, and performant code using the latest C++ features Build applications that are easy to maintain and deploy Explore the different architectural approaches and learn to apply them as per your requirement Simplify development and operations using application containers Discover various techniques to solve common problems in software design and development Who this book is for This software architecture C++ programming book is for experienced C++ developers who are looking to become software architects or are interested in developing enterprise-grade applications.

TCP/IP Illustrated: TCP for transactions, HTTP, NNTP, and the UNIX domain protocols

Systematic Reuse with ACE and Frameworks

Design and Implementation of Network Protocols in the Linux Kernel

Effective TCP/IP Programming

Comparing, Designing, and Deploying VPNs

Network Programming with Perl

"Linux Socket Programming" provides thorough, authoritative coverage of the sockets API, the defacto standard for all network programming. It gives real-world examples that demonstrate effective techniques to make code more robust and versatile. This book contains the only complete reference for all calls and functions needed to program sockets.

TCP/IP Illustrated, an ongoing series covering the many facets of TCP/IP, brings a highly-effective visual approach to learning about this networking protocol suite. TCP/IP Illustrated, Volume 2 contains a thorough explanation of how TCP/IP protocols are implemented. There isn't a more practical or up-to-date bookthis volume is the only one to cover the de facto standard implementation from the 4.4BSD-Lite release, the foundation for TCP/IP implementations run daily on hundreds of thousands of systems worldwide. Combining 500 illustrations with 15,000 lines of real, working code, TCP/IP Illustrated, Volume 2 uses a teach-by-example approach to help you master TCP/IP implementation. You will learn about such topics as the relationship between the sockets API and the protocol suite, and the differences between a host implementation and a router. In addition, the book covers the newest features of the 4.4BSD-Lite release, including multicasting, long fat pipe support, window scale, timestamp options, and protection against wrapped sequence numbers, and many other topics. Comprehensive in scope, based on a working standard, and thoroughly illustrated, this book is an indispensable resource for anyone working with TCP/IP. 020163354XB04062001

V.1 Networking APIs: sockets and XTI V.2 Interprocess communications.

TCP/IP Illustrated, Volume 1, Second Edition, is a detailed and visual guide to today's TCP/IP protocol suite. Fully updated for the newest innovations, it demonstrates each protocol in action through realistic examples from modern Linux, Windows, and Mac OS environments. There's no better way to discover why TCP/IP works as it does, how it reacts to common conditions, and how to apply it in your own applications and networks. Building on the late W. Richard Stevens' classic first edition, author Kevin R. Fall adds his cutting-edge experience as a leader in TCP/IP protocol research, updating the book to fully reflect the latest protocols and best practices.

International Edition

Unix Network Programming The Sockets And Networking Api Vol. 1 3Rd Ed.

Linux Socket Programming

Advanced UNIX Programming

Design modern systems using effective architecture concepts, design patterns, and techniques with C++20

Advanced Programming in the UNIX Environment

Here is a programmer's guide to using and programming POSIX threads, commonly known as Pthreads. A "coder's book", this title tells how to use Pthreads in the real world, making efficient and portable applications. Pthreads are an important set of current tools programmers need to have in today's network-intensive climate.

The classic guide to UNIX® programming—completely updated! UNIX application programming requires a mastery of system-level services. Making sense of the many functions—more than 1,100 functions in the current UNIX specification—is a daunting task, so for years programmers have turned to Advanced UNIX Programming for its clear, expert advice on how to use the key functions reliably. An enormous number of changes have taken place in the UNIX environment since the landmark first edition. In Advanced UNIX Programming, Second Edition, UNIX pioneer Marc J. Rochkind brings the book fully up to date, with all-new, comprehensive coverage including: POSIX Solaris™ Linux® FreeBSD Darwin, the Mac™ OS X kernel And more than 200 new system calls Rochkind's fully updated classic explains all the UNIX system calls you're likely to need, all in a single volume! Interprocess communication, networking (sockets), pseudo terminals, asynchronous I/O, advanced signals, realtime, and threads Covers the system calls you'll actually use—no need to plow through hundreds of improperly implemented, obsolete, and otherwise unnecessary system calls! Thousands of lines of example code include a Web browser and server, a keystroke recorder/player, and a shell complete with pipelines, redirection, and background processes Emphasis on the practical—ensuring portability, avoiding pitfalls, and much more! Since 1985, the one book to have for mastering UNIX application programming has been Rochkind's Advanced UNIX Programming. Now completely updated, the second edition remains the choice for up-to-the-minute, in-depth coverage of the essential system-level services of the UNIX family of operating systems.

Shell Programming in Unix, Linux and OS X is a thoroughly updated revision of Kochan and Wood's classic Unix Shell Programming tutorial. Following the methodology of the original text, the book focuses on the POSIX standard shell, and teaches you how to develop programs in this useful programming environment, taking full advantage of the underlying power of Unix and Unix-like operating systems. After a quick review of Unix utilities, the book's authors take you step-by-step through the process of building shell scripts, debugging them, and understanding how they work within the shell's environment. All major features of the shell are covered, and the large number of practical examples make it easy for you to build shell scripts for your particular applications. The book also describes the major features of the Korn and Bash shells. Learn how to... Take advantage of the many utilities provided in the Unix system Write powerful shell scripts Use the shell's built-in decision-making and looping constructs Use the shell's powerful quoting mechanisms Make the most of the shell's built-in history and command editing capabilities Use regular expressions with Unix commands Take advantage of the special features of the Korn and Bash shells Identify the major differences between versions of the shell language Customize the way your Unix system responds to you Set up your shell environment Make use of functions Debug scripts Contents at a Glance 1 A Quick Review of the Basics 2 What Is the Shell? 3 Tools of the Trade 4 And Away We Go 5 Can I Quote You on That? 6 Passing Arguments 7 Decisions, Decisions 8 'Round and 'Round She Goes 9 Reading and Printing Data 10 Your Environment 11 More on Parameters 12 Loose Ends 13 Rolo Revisited 14 Interactive and Nonstandard Shell Features A Shell Summary B For More Information

A growing number of the 90,000 network programmers who bought Rich Stevens' UNIX Network Programming need to address a topic not covered by this classic—how to deal with Windows Sockets, also known as WinSock. This book is the definitive word on WinSock, offering a complete tutorial on how to work with Windows Sockets and sample code, which will be available on the Internet.

UNIX Network Programming, Volume 2

TCP/IP Illustrated, Volume 1

Software Architecture with C++

Extending and Embedding PHP

The Protocols

C++ Network Programming, Volume 2

UNIX Network Programming, Volume 1: The Sockets Networking API, Third Edition "Everyone will want this book because it provides a great mix of practical experience, historical perspective, and a depth of understanding that only comes from being intimately involved in the field. I've already enjoyed and learned from reading this book, and surely you will too." --Sam Leffer The classic guide to UNIX networking APIs... now completely updated! To build today's highly distributed, networked applications and services, you need deep mastery of sockets and other key networking APIs. One book delivers comprehensive, start-to-finish guidance for building robust, high-performance networked systems in any environment: UNIX Network Programming, Volume 1, Third Edition. Building on the legendary work of W. Richard Stevens, this edition has been fully updated by two leading network programming experts to address today's most crucial standards, implementations, and techniques. New topics include: POSIX Single UNIX Specification Version 3 IPv6 APIs (including updated guidance on IPv6/IPv4 interoperability) The new SCTP transport protocol IPsec-based Key Management Sockets FreeBSD 4.8/5.1, Red Hat Linux 9.x, Solaris 9, AIX 5.x, HP-UX, and Mac OS X implementations New network program debugging techniques Source Specific Multicast API, the key enabler for widespread IP multicast deployment The authors also update and extend Stevens' definitive coverage of these crucial UNIX networking standards and techniques: TCP and UDP transport Sockets: elementary, advanced, routed, and raw I/O: multiplexing, advanced functions, nonblocking, and signal-driven Daemons and inetd UNIX domain protocols ioctl operations Broadcasting and multicasting Threads Streams Design: TCP iterative, concurrent, preforked, and prethreaded servers Since 1990, network programmers have turned to one source for the insights and techniques they need: W. Richard Stevens' UNIX Network Programming . Now, there's an edition specifically designed for today's challenges—and tomorrow's.

The Pocket Guide to TCP/IP Sockets is a quick and affordable way to gain the knowledge and skills you need to develop sophisticated and powerful networked-based programs using sockets. Written by two experienced networking instructors, this book provides a series of examples that demonstrate basic sockets techniques for clients and servers. Using plenty of real-world examples, this book is a complete beginner's guide to socket programming and a springboard to more advanced networking topics, including multimedia protocols. Teaches every PHP developer how to increase the performance and functionality of PHP- based websites, programs and applications.

TCP/IP Illustrated, Volume 3 covers four major topics of great importance to anyone working TCP/IP. It contains the first thorough treatment of TCP for transactions, commonly known as T/TCP, an extension to TCP that makes client-server transactions faster and more efficient. Next, the book covers two popular applications of T/TCP, the very hot topic of HTTP (the Hypertext Transfer Protocol), the foundation for the World Wide Web, and NNTP (the Network News Transfer Protocol), the basis for the Usenet news system. Both of these topics have increased in significance as the Internet has exploded in size and usage. Finally, the book covers UNIX Domain Protocols, protocols that are used heavily in UNIX implementations.

The Fourth Edition of Unix Shell Programming

UNIX Network Programming

UNIX Network Programming: Interprocess communications

Mastering Complexity with ACE and Patterns, Portable Documents

Linux Socket Programming by Example

The Implementation

A text focusing on the methods and alternatives for designed TCP/IP-based client/server systems and advanced techniques for specialized applications with Perl. A guide examining a collection of the best third party modules in the Comprehensive Perl Archive Network. Topics covered: Perl function libraries and techniques that allow programs to interact with resources over a network. IO: Socket library ; Net: FTP library -- Telnet library -- SMTP library ; Chat problems ; Internet Message Access Protocol (IMAP) issues ; Markup-language parsing ; Internet Protocol (IP) broadcasting and multicasting.

The revision of the definitive guide to Unix system programming is now available in a more portable format.

Software -- Operating Systems.

Do you need to develop flexible software that can be customized quickly? Do you need to add the power and efficiency of frameworks to your software? The ADAPTIVE Communication Environment (ACE) is an open-source toolkit for building high-performance networked applications and next-generation middleware. ACE's power and flexibility arise from object-oriented frameworks, used to achieve the systematic reuse of networked application software. ACE frameworks handle common network programming tasks and can be customized using C++ language features to produce complete distributed applications. C++ Network Programming, Volume 2, focuses on ACE frameworks, providing thorough coverage of the concepts, patterns, and usage rules that form their structure. This book is a practical guide to designing object-oriented frameworks and shows developers how to apply frameworks to concurrent networked applications. C++ Networking, Volume 1, introduced ACE and the wrapper facades, which are basic network computing ingredients. Volume 2 explains how frameworks build on wrapper facades to provide higher-level communication services. Written by two experts in the ACE community, this book contains: An overview of ACE frameworks Design dimensions for networked services Descriptions of the key capabilities of the most important ACE frameworks Numerous C++ code examples that demonstrate how to use ACE frameworks C++ Network Programming, Volume 2, teaches how to use frameworks to write networked applications quickly, reducing development effort and overhead. It will be an invaluable asset to any C++ developer working on networked applications.

C++ Network Programming, Volume I

ABCs of z/OS System Programming:

Practical Design Patterns for Network and Systems Programming

UNIX System Programming Using C++

Unix Network Programming Interprocess Communications Vol. 2 , 2Nd Ed.

To build today's highly distributed, networked applications and services, you need deep mastery of sockets and other key networking APIs. One book delivers comprehensive, start-to-finish guidance for building robust, high-performance networked systems in any environment: UNIX Network Programming, Volume 1, Third Edition.

This unique Linux networking tutorial reference provides students with a practical overview and understanding of the implementation of networking protocols in the Linux kernel. By gaining a familiarity with the Linux kernel architecture, students can modify and enhance the functionality of protocol instances. -- Provided by publisher.

IPv6 was introduced in 1994 and has been in development at the IETF for over 10 years. It has now reached the deployment stage. KAME, the de-facto open-source reference implementation of the IPv6 standards, played a significant role in the acceptance and the adoption of the IPv6 technology. The adoption of KAME by key companies in a wide spectrum of commercial products is a testimonial to the success of the KAME project, which concluded not long ago. This book is the first and the only one of its kind, which reveals all of the details of the KAME IPv6 protocol stack, explaining exactly what every line of code does and why it was designed that way. Through the dissection of both the code and its design, the authors illustrate how IPv6 and its related protocols have been interpreted and implemented from the specifications. This reference will demystify those ambiguous areas in the standards, which are open to interpretation and problematic in deployment, and presents solutions offered by KAME in dealing with these implementation challenges. Covering a snapshot version of KAME dated April 2003 based on FreeBSD 4.8 Extensive line-by-line code listings with meticulous explanation of their rationale and use for the KAME snapshot implementation, which is generally applicable to most recent versions of the KAME IPv6 stack including those in recent releases of BSD variants Numerous diagrams and illustrations help in visualizing the implementation In-depth discussion of the standards provides intrinsic understanding of the specifications

* Covers low-level networking in Python —essential for writing a new networked application protocol. * Many working examples demonstrate concepts in action -- and can be used as starting points for new projects. * Networked application security is demystified. * Exhibits and explains multitasking network servers using several models, including forking, threading, and non-blocking sockets. * Features extensive coverage of Web and E-mail. Describes Python's database APIs.

Hands-On Network Programming with C
 The Linux Networking Architecture
 Learning the bash Shell
 Understanding Linux Network Internals
 Remote Control Robotics

Unix Network Programming: The Sockets Networking Api

Demonstrates socket programming fundamentals, including writing servers, creating secure applications, address conversion functions, socket types, and TCP/IP protocols and options
A detailed guide for deploying PPTP, L2TPv2, L2TPv3, MPLS Layer-3, AToM, VPLS and IPSec virtual private networks.

UNIX Network ProgrammingPrentice Hall

O'Reilly's bestselling book on Linux's bash shell is at it again. Now that Linux is an established player both as a server and on the desktop Learning the bash Shell has been updated and refreshed to account for all the latest changes. Indeed, this third edition serves as the most valuable guide yet to the bash shell.As any good programmer knows, the first thing users of the Linux operating system come face to face with is the shell the UNIX term for a user interface to the system. In other words, it's what lets you communicate with the computer via the keyboard and display. Mastering the bash shell might sound fairly simple but it isn't. In truth, there are many complexities that need careful explanation, which is just what Learning the bash Shell provides.If you are new to shell programming, the book provides an excellent introduction, covering everything from the most basic to the most advanced features. And if you've been writing shell scripts for years, it offers a great way to find out what the new shell offers. Learning the bash Shell is also full of practical examples of shell commands and programs that will make everyday use of Linux that much easier. With this book, programmers will learn: How to install bash as your login shell The basics of interactive shell use, including UNIX file and directory structures, standard I/O, and background jobs Command line editing, history substitution, and key bindings How to customize your shell environment without programming The nuts and bolts of basic shell programming, flow control structures, command-line options and typed variables Process handling, from job control to processes, coroutines and subshells Debugging techniques, such as trace and verbose modes Techniques for implementing system-wide shell customization and features related to system security

Interprocess Communications (Paperback)

The Pocket Guide to TCP/IP Sockets

Programming with POSIX Threads

IPv6 Core Protocols Implementation

Foundations of Python Network Programming

UNIX Network Programming: Vol. 1: The Sockets Networking API.

"For an engineer determined to refine and secure Internet operation or to explore alternative solutions to persistent problems, the insights provided by this book will be invaluable."—Vint Cerf, Internet pioneer TCP/IP Illustrated, Volume 1, Second Edition, is a detailed and visual guide to today's TCP/IP protocol suite. Fully updated for the newest innovations, it demonstrates each protocol in action through realistic examples from modern Linux, Windows, and Mac OS environments. There's no better way to discover why TCP/IP works as it does, how it reacts to common conditions, and how to apply it in your own applications and networks. Building on the late W. Richard Stevens' classic first edition, author Kevin R. Fall adds his cutting-edge experience as a leader in TCP/IP protocol research, updating the book to fully reflect the latest protocols and best practices. He first introduces TCP/IP's core goals and architectural concepts, showing how they can robustly connect diverse networks and support multiple services running concurrently. Next, he carefully explains Internet addressing in both IPv4 and IPv6 networks. Then, he walks through TCP/IP's structure and function from the bottom up: from link layer protocols—such as Ethernet and Wi-Fi—through network, transport, and application layers. Fall thoroughly introduces ARP, DHCP, NAT, firewalls, ICMPv4/ICMPv6, broadcasting, multicasting, UDP, DNS, and much more. He offers extensive coverage of reliable transport and TCP, including connection management, timeout, retransmission, interactive data flow, and congestion control. Finally, he introduces the basics of security and cryptography, and illuminates the crucial modern protocols for protecting security and privacy, including EAP, IPsec, TLS, DNSSEC, and DKIM. Whatever your TCP/IP experience, this book will help you gain a deeper, more intuitive understanding of the entire protocol suite so you can build better applications and run more reliable, efficient networks.

Programming in TCP/IP can seem deceptively simple. Nonetheless, many network programmers recognize that their applications could be much more robust. Effective TCP/IP Programming is designed to boost programmers to a higher level of competence by focusing on the protocol suite's more subtle features and techniques. It gives you the know-how you need to produce highly effective TCP/IP programs. In forty-four concise, self-contained lessons, this book offers experience-based tips, practices, and rules of thumb for learning high-performance TCP/IP programming techniques. Moreover, it shows you how to avoid many of TCP/IP's most common trouble spots. Effective TCP/IP Programming offers valuable advice on such topics as: Exploring IP addressing, subnets, and CIDR Preferring the sockets interface over XTl/TLI Using two TCP connections Making your applications event-driven Using one large write instead of multiple small writes Avoiding data copying Understanding what TCP reliability really means Recognizing the effects of buffer sizes Using tcpdump, traceroute, netstat, and ping effectively Numerous examples demonstrate essential ideas and concepts. Skeleton code and a library of common functions allow you to write applications without having to worry about routine chores. Through individual tips and explanations, you will acquire an overall understanding of TCP/IP's inner workings and the practical knowledge needed to put it to work. Using Effective TCP/IP Programming, you'll speed through the learning process and quickly achieve the programming capabilities of a seasoned pro. A comprehensive guide to programming with network sockets, implementing Internet protocols, designing IoT devices, and much more with C Key Features Leverage your C or C++ programming skills to build powerful network applications Get to grips with a variety of network protocols that allow you to load web pages, send emails, and do much more Write portable network code for operating systems such as Windows, Linux, and macOS Book Description Network programming, a challenging topic in C, is made easy to understand with a careful exposition of socket programming APIs. This book gets you started with modern network programming in C and the right use of relevant operating system APIs. This book covers core concepts, such as hostname resolution with DNS, that are crucial to the functioning of the modern web. You'll delve into the fundamental network protocols, TCP and UDP. Essential techniques for networking paradigms such as client-server and peer-to-peer models are explained with the help of practical examples. You'll also study HTTP and HTTPS (the protocols responsible for web pages) from both the client and server perspective. To keep up with current trends, you'll apply the concepts covered in this book to gain insights into web programming for IoT. You'll even get to grips with network monitoring and implementing security best practices. By the end of this book, you'll have experience of working with client-server applications, and be able to implement new network programs in C. The code in this book is compatible with the older C99 version as well as the latest C18 and C++17 standards. Special consideration is given to writing robust, reliable, and secure code that is portable across operating systems, including Winsock sockets for Windows and POSIX sockets for Linux and macOS. What you will learn Uncover cross-platform socket programming APIs Implement techniques for supporting IPv4 and IPv6 Understand how TCP and UDP connections work over IP Discover how hostname resolution and DNS work Interface with web APIs using HTTP and HTTPS Acquire hands-on experience with Simple Mail Transfer Protocol (SMTP) Apply network programming to the Internet of Things (IoT) Who this book is for If you're a developer or a system administrator who wants to enter the world of network programming, this book is for you. Basic knowledge of C programming is assumed.

"Steve Rago offers valuable insights into the kernel-level features of SVR4 not covered elsewhere; I think readers will especially appreciate the coverage of STREAMS, TLI, and SLIP." - W. Richard Stevens, author of UNIX Network Programming, Advanced Programming in the UNIX Environment, TCP/IP Illustrated Volume 1, and TCP/IP Illustrated Volume 2 Finally, with UNIX(R) System V Network Programming, an authoritative reference is available for programmers and system architects interested in building networked and distributed applications for UNIX System V. Even if you currently use a different version of the UNIX system, such as the latest release of 4.3BSD or SunOS, this book is valuable to you because it is centered around UNIX System V Release 4, the version of the UNIX system that unified many of the divergent UNIX implementations. For those professionals new to networking and UNIX system programming, two introductory chapters are provided. The author then presents the programming interfaces most important to building communication software in System V, including STREAMS, the Transport Layer Interface library, Sockets, and Remote Procedure Calls. So that your designs are not limited to user-level, the author also explains how to write kernel-level communication software, including STREAMS drivers, modules, and multiplexors. Many examples are provided, including an Ethernet driver and a transport-level multiplexing driver. In the final chapter, the author brings the material from previous chapters together, presenting the design of a SLIP communication package. 0201563185B04062001

TCP/IP Illustrated, Volume 2 (paperback)

Unix Network Programming Volume 1: the Sockets Networking API

Learn socket programming in C and write secure and optimized network code

Windows Sockets Network Programming

Shell Programming in Unix, Linux and OS X

As networks, devices, and systems continue to evolve, software engineers face the unique challenge of creating reliable distributed applications within frequently changing environments. C++ Network Programming, Volume 1, provides practical solutions for developing and optimizing complex distributed systems using the ADAPTIVE Communication Environment (ACE), a revolutionary open-source framework that runs on dozens of hardware platforms and operating systems. This book guides software professionals through the traps and pitfalls of developing efficient, portable, and flexible networked applications. It explores the inherent design complexities of concurrent networked applications and the tradeoffs that must be considered when working to master them. C++ Network Programming begins with an overview of the issues and tools involved in writing distributed concurrent applications. The book then provides the essential design dimensions, patterns, and principles needed to develop flexible and efficient concurrent networked applications. The book's expert author team shows you how to enhance design skills while applying C++ and patterns effectively to develop object-oriented networked applications. Readers will find coverage of: C++ network programming, including an overview and strategies for addressing common development challenges The ACE Toolkit Connection protocols, message exchange, and message-passing versus shared memory Implementation methods for reusable networked application services Concurrency in object-oriented network programming Design principles and patterns for ACE wrapper facades With this book, C++ developers have at their disposal the most complete toolkit available for developing successful, multiplatform, concurrent networked applications with ease and efficiency.