

UNIX Network Programming

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Practical UNIX and Internet Security - Simson Garfinkel 2003-02-21

When Practical Unix Security was first published more than a decade ago, it became an instant classic. Crammed with information about host security, it saved many a Unix system administrator from disaster. The second edition added much-needed Internet security coverage and doubled the size of the original volume. The third edition is a comprehensive update of this very popular book - a companion for the Unix/Linux system administrator who needs to secure his or her organization's system, networks, and web presence in an increasingly hostile world. Focusing on the four most popular Unix variants today--Solaris, Mac OS X, Linux, and FreeBSD--this book contains new information on PAM (Pluggable Authentication Modules), LDAP, SMB/Samba, anti-theft technologies, embedded systems, wireless and laptop issues, forensics, intrusion detection, chroot jails, telephone scanners and firewalls, virtual and cryptographic filesystems, WebNFS, kernel security levels, outsourcing, legal issues, new Internet protocols and cryptographic

algorithms, and much more. Practical Unix & Internet Security consists of six parts: Computer security basics: introduction to security problems and solutions, Unix history and lineage, and the importance of security policies as a basic element of system security. Security building blocks: fundamentals of Unix passwords, users, groups, the Unix filesystem, cryptography, physical security, and personnel security. Network security: a detailed look at modem and dialup security, TCP/IP, securing individual network services, Sun's RPC, various host and network authentication systems (e.g., NIS, NIS+, and Kerberos), NFS and other filesystems, and the importance of secure programming. Secure operations: keeping up to date in today's changing security world, backups, defending against attacks, performing integrity management, and auditing. Handling security incidents: discovering a break-in, dealing with programmed threats and denial of service attacks, and legal aspects of computer security. Appendixes: a comprehensive security checklist and a detailed bibliography of paper and electronic references for further

reading and research. Packed with 1000 pages of helpful text, scripts, checklists, tips, and warnings, this third edition remains the definitive reference for Unix administrators and anyone who cares about protecting their systems and data from today's threats.

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

Software Architecture with C++ - Adrian Ostrowski 2021-04-23

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, but there are architectural concepts and patterns that you can learn 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, then move on to understanding what software architecture actually is and start exploring 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 looking to become software architects or develop enterprise-grade applications.

Effective TCP/IP Programming - Jon C. Snader 2000-05-04

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 XTI/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.

TCP/IP Illustrated - Kevin R. Fall 2011

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.

Java Network Programming - Elliottte Rusty Harold 2000

A guide to developing network programs covers networking fundamentals as well as TCP and UDP sockets, multicasting protocol, content handlers, servlets, I/O, parsing, Java Mail API, and Java Secure Sockets Extension.

UNIX Network Programming: Interprocess communications - W. Richard Stevens 1998

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

UNIX Network Programming: Vol. 1: The Sockets Networking API. - Richard W Stevens 2003

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 Leffler 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.

UNIX network programming - 1992

IPv6 Network Programming - Jun-ichiro itojun Hagino 2004-11-16

This book contains everything you need to make your application program support IPv6. IPv6 socket APIs (RFC2553) are fully described with real-world examples. It covers security, a great concern these days. To secure the Internet infrastructure, every developer has to take a security stance - to audit every line of code, to use proper API and write correct and secure code as much as possible. To achieve this goal, the examples presented in this book are implemented with a security stance. Also, the book leads you to write secure programs. For instance, the book recommends against the use of some of the IPv6 standard APIs - unfortunately, there are some IPv6 APIs that are inherently insecure, so the book tries to avoid (and discourage) the use of such APIs. Another key issue is portability. The examples in the book should be applicable to any of UNIX based operating systems, MacOS X, and Windows XP. * Covers the new protocol just adopted by the Dept of Defense for future systems * Deals with security concerns, including spam and email, by presenting the best programming standards * Fully describes IPv6 socket APIs (RFC2553) using real-world examples * Allows for portability to UNIX-based operating systems, MacOS X, and Windows XP

Hands-On Network Programming with C - Lewis Van Winkle 2019-05-13

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.

UNIX System V Network Programming - Stephen A. Rago 1993

"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.

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UNIX Network Programming - W. Richard Stevens 2004

C++ Network Programming, Volume 2 - Douglas Schmidt 2002-10-29

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.

UNIX Network Programming: The sockets networking API - W. Richard Stevens 2004

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.

Unix Network Programming Volume 1: the Sockets Networking API - Stevens Richard 2003-11

UNIX Network Programming - Bill Fenner 2004

Network Programming Interface - UNIX System Laboratories 1992

Covers the development tools needed to create applications based on a client/server model of computing. The book describes the programming interfaces to SVRR4.2 networking facilities such as Transport Library Interface (TLI), Sockets, Remote Procedure Call (RPC), Connection Server and REXEC.

UNIX NETWORK PROGRAMMING - W.RICHARD STEVENS 2001-03-30

Python for Unix and Linux System Administration - Noah Gift 2008-08-22

Python is an ideal language for solving problems, especially in Linux and Unix networks. With this pragmatic book, administrators can review various tasks that often occur in the management of these systems, and learn how Python can provide a more efficient and less painful way to handle them. Each chapter in Python for Unix and Linux System Administration presents a particular administrative issue, such as concurrency or data backup, and presents Python solutions through hands-on examples. Once you finish this book, you'll be able to develop your own set of command-line utilities with Python to tackle a wide range of problems. Discover how this language can help you: Read text files and extract information Run tasks concurrently using the threading and forking options Get information from one process to another using network facilities Create clickable GUIs to handle large and complex utilities Monitor large clusters of machines by interacting with SNMP programmatically Master the IPython Interactive Python shell to replace or augment Bash, Korn, or Z-Shell Integrate Cloud Computing into your infrastructure, and learn to write a Google App Engine Application Solve unique data backup challenges with customized scripts Interact with MySQL, SQLite, Oracle, Postgres, Django ORM, and SQLAlchemy With this book, you'll learn how to package and deploy your Python applications and libraries, and write code that runs equally well on multiple Unix platforms.

You'll also learn about several Python-related technologies that will make your life much easier.

Advanced Programming in the UNIX Environment - W. Richard Stevens 2008-01-01

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

UNIX Network Programming - Sams 1996-01-01

UNIX Network Programming - W. Richard Stevens 1990

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.

Unix - 1999

Systems Programming in Unix/Linux - K.C. Wang 2018-08-27

Covering all the essential components of Unix/Linux, including process management, concurrent programming, timer and time service, file systems and network programming, this textbook emphasizes programming practice in the Unix/Linux environment. Systems Programming in Unix/Linux is intended as a textbook for systems programming courses in technically-oriented Computer Science/Engineering curricula that emphasize both theory and programming practice. The book contains many detailed working example programs with complete source code. It is also suitable for self-study by advanced programmers and computer enthusiasts. Systems programming is an indispensable part of Computer Science/Engineering education. After taking an introductory programming course, this book is meant to further

knowledge by detailing how dynamic data structures are used in practice, using programming exercises and programming projects on such topics as C structures, pointers, link lists and trees. This book provides a wide range of knowledge about computer system software and advanced programming skills, allowing readers to interface with operating system kernel, make efficient use of system resources and develop application software. It also prepares readers with the needed background to pursue advanced studies in Computer Science/Engineering, such as operating systems, embedded systems, database systems, data mining, artificial intelligence, computer networks, network security, distributed and parallel computing.

[Beej's Guide to Network Programming](#) - Brian "beej Jorgensen" Hall
2019-12-12

Back in the mid 90s, Beej got tired of all his friends asking him how to do this stuff with networking programming in C, so he put pen to paper on the early World Wide Web and wrote down everything he knew just to get them off his back. Since then, the Guide has expanded significantly, with plenty of examples, and covers IPv6. Inside you'll find such diverse topics as: Sockets programming in the C programming language, client/server, IPv4 and IPv6, data encoding, lots of manual pages rewritten in a friendlier format with examples, and goats! Actually no goats, but goats will be with you in spirit! Beej's Guide to Network Programming is also freely available for PDF download online in US Letter and A4 sizes, in its entirety, and always will be--Google for it. The bound version here is provided as a service to those who still prefer the analog printed word. (And to those who want to kick back a few bucks to the author.)

The Art of UNIX Programming - Eric S. Raymond 2003-09-23

The Art of UNIX Programming poses the belief that understanding the unwritten UNIX engineering tradition and mastering its design patterns will help programmers of all stripes to become better programmers. This book

attempts to capture the engineering wisdom and design philosophy of the UNIX, Linux, and Open Source software development community as it has evolved over the past three decades, and as it is applied today by the most experienced programmers. Eric Raymond offers the next generation of "hackers" the unique opportunity to learn the connection between UNIX philosophy and practice through careful case studies of the very best UNIX/Linux programs.

Unix Network Programming - Sockets Stevens 1998

UNIX Networking - Stephen G. Kochan 1989

Presents an overview of all the major UNIX network systems available.
Bibliogs

UNIX Network Programming, Volume 2 - W. Richard Stevens 1998-08-25

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 every form of IPC, including 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 standards, which offer dramatic improvements in convenience and performance.

UNIX Network Programming: The sockets networking API - W. Richard Stevens 2004

UNIX Network Programming - W. Richard Stevens 1994

Network Programming with Go - Adam Woodbeck 2021-03-30

Network Programming with Go teaches you how to write clean, secure

network software with the programming language designed to make it seem easy. Go combines the best parts of many other programming languages. It's fast, scalable, and designed for high-performance networking and multiprocessing—in other words, it's perfect for network programming. Network Programming with Go is for developers ready to start leveraging Go's ease of use for writing secure, readable, production-ready network code. Early chapters establish a foundation of networking and traffic-routing know-how upon which the rest of the book builds. You'll put that knowledge to use as author Adam Woodbeck guides you through writing programs that communicate using TCP, UDP, Unix sockets, and other features that ensure reliable data transmission. As you progress, you'll explore higher-level network protocols like HTTP and HTTP/2, then build applications that securely interact with servers, clients, and APIs over a network using TLS. In addition, Woodbeck shows you how to create a simple messaging protocol, develop tools for monitoring network traffic, craft a custom web server, and implement best practices for interacting with cloud providers using their SDKs. Along the way, you'll learn:

- IP basics for writing effective network programs, such as IPv4 and IPv6 multicasting, ports, and network address translation
- How to use handlers, middleware, and multiplexers to build capable HTTP-based applications with minimal code
- The OSI and TCP/IP models for layered data architectures
- Methods for reading data from/writing data to a network connection, like the type-length-value encoding scheme
- Tools for incorporating authentication and encryption into your applications using TLS, like mutual authentication
- How to serialize data for storage or transmission in Go-friendly formats like JSON, Gob, XML, and protocol buffers
- How to Leverage Go's code generation support to efficiently communicate with gRPC-based network services

So get ready to take advantage of Go's built-in concurrency, rapid compiling, and rich standard library. Because when it comes to writing robust network programs, it's Go

time.

Windows Sockets Network Programming - Bob Quinn 1996

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.

Linux Network Administrator's Guide - Olaf Kirch 2000

This introduction to networking on Linux now covers firewalls, including the use of ipchains and Netfilter, masquerading, and accounting. Other new topics in this second edition include Novell (NCP/IPX) support and INN (news administration).

Linux Socket Programming - Sean Walton 2001

"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.

Network Programming with Perl - Lincoln D. Stein 2001

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 Definitive Guide to Linux Network Programming - Nathan Yocom
2004-08-05

* Clear and abundant examples, using real-world code, written by three experienced developers who write networking code for a living. * Describes how to build clients and servers, explains how TCP, UDP, and IP work, and shows how to debug networking applications via packet sniffing and deconstruction. * Well suited for Windows developer looking to expand to Linux, or for the proficient Linux developer looking to incorporate client-server programming into their application.

Unix Network Programming: The Sockets Networking Api - W. Richard Stevens 2011

Adventures in UNIX Network Applications Programming - Bill Rieken
1992-11-04

Written to help you with the ten percent of the network programming that consumes ninety percent of your time and causes most of your vexing problems, it teaches communications/network programming, including interprocess communicator, protocols, and process level application programming. Geared to the growing number of programmers in the UNIX workstation environment, it covers a variety of the most widely used protocols of OSI, TCP/IP, X.25, Berkeley Sockets, AT&T System V Streams and more. In addition, it develops the code for solutions to typical problems in network software programming and offers numerous practical and helpful examples.