

UNIX Network Programming Volume 2 Interprocess Communications Interprocess Communications V 2

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Foundations of Multithreaded, Parallel, and Distributed Programming - Gregory R. Andrews 2000

Foundations of Multithreaded, Parallel, and Distributed Programming covers, and then applies, the core concepts and techniques needed for an introductory course in this subject. Its emphasis is on the practice and application of parallel systems, using real-world examples throughout. Greg Andrews teaches the fundamental concepts of multithreaded, parallel and distributed computing and relates them to the implementation and performance processes. He presents the appropriate breadth of topics and supports these discussions with an emphasis on performance. Features Emphasizes how to solve problems, with correctness the primary concern and performance an important, but secondary, concern Includes a number of case studies which cover such topics as pthreads, MPI, and OpenMP libraries, as well as programming languages like Java, Ada, high performance Fortran, Linda, Occam, and SR Provides examples using Java syntax and discusses how Java deals with monitors, sockets, and remote method invocation Covers current programming techniques such as semaphores, locks, barriers, monitors, message passing, and remote invocation Concrete examples are executed with complete programs, both shared and distributed Sample

applications include scientific computing and distributed systems
0201357526B04062001

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. 0201563185B04062001

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.

Solaris Systems Programming - Rich Teer 2005

With this comprehensive text, Solaris practitioners will find all the information they need as they face and overcome significant challenges of their everyday work. Real-world case studies, poignant examples, and illustrative diagrams are rolled into this thorough reference.

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: The Complete Reference, Second Edition - Kenneth Rosen
2006-12-19

The Definitive UNIX Resource--Fully Updated Get cutting-edge coverage of the newest releases of UNIX--including Solaris 10, all Linux distributions, HP-UX, AIX, and FreeBSD--from this thoroughly revised, one-stop resource for users at all experience levels. Written by UNIX experts with many years of experience starting with Bell Laboratories, UNIX: The Complete Reference, Second Edition provides step-by-step instructions on how to use UNIX and take advantage of its powerful tools and utilities. Get up-and-running on UNIX quickly, use the command shell and desktop, and access the Internet and e-mail. You'll also learn to administer systems and networks, develop applications, and secure your

UNIX environment. Up-to-date chapters on UNIX desktops, Samba, Python, Java Apache, and UNIX Web development are included. Install, configure, and maintain UNIX on your PC or workstation Work with files, directories, commands, and the UNIX shell Create and modify text files using powerful text editors Use UNIX desktops, including GNOME, CDE, and KDE, as an end user or system administrator Use and manage e-mail, TCP/IP networking, and Internet services Protect and maintain the security of your UNIX system and network Share devices, printers, and files between Windows and UNIX systems Use powerful UNIX tools, including awk, sed, and grep Develop your own shell, Python, and Perl scripts, and Java, C, and C++ programs under UNIX Set up Apache Web servers and develop browser-independent Web sites and applications

Hands-On System Programming with Linux - Kaiwan N Billimoria
2018-10-31

Get up and running with system programming concepts in Linux Key FeaturesAcquire insight on Linux system architecture and its programming interfacesGet to grips with core concepts such as process management, signalling and pthreadsPacked with industry best practices and dozens of code examplesBook Description The Linux OS and its embedded and server applications are critical components of today's software infrastructure in a decentralized, networked universe. The industry's demand for proficient Linux developers is only rising with time. Hands-On System Programming with Linux gives you a solid theoretical base and practical industry-relevant descriptions, and covers the Linux system programming domain. It delves into the art and science of Linux application programming— system architecture, process memory and management, signaling, timers, pthreads, and file IO. This book goes beyond the use API X to do Y approach; it explains the concepts and theories required to understand programming interfaces and design decisions, the tradeoffs made by experienced developers when using them, and the rationale behind them. Troubleshooting tips and techniques are included in the concluding chapter. By the end of this book, you will have gained essential conceptual design knowledge and hands-on experience working with Linux system programming interfaces.

What you will learnExplore the theoretical underpinnings of Linux system architectureUnderstand why modern OSes use virtual memory and dynamic memory APIsGet to grips with dynamic memory issues and effectively debug themLearn key concepts and powerful system APIs related to process managementEffectively perform file IO and use signaling and timersDeeply understand multithreading concepts, pthreads APIs, synchronization and schedulingWho this book is for Hands-On System Programming with Linux is for Linux system engineers, programmers, or anyone who wants to go beyond using an API set to understanding the theoretical underpinnings and concepts behind powerful Linux system programming APIs. To get the most out of this book, you should be familiar with Linux at the user-level logging in, using shell via the command line interface, the ability to use tools such as find, grep, and sort. Working knowledge of the C programming language is required. No prior experience with Linux systems programming is assumed.

The Pragmatic Programmer - Andrew Hunt 1999-10-20

What others in the trenches say about The Pragmatic Programmer...

"The cool thing about this book is that it's great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there." —Kent Beck, author of Extreme Programming Explained: Embrace Change "I found this book to be a great mix of solid advice and wonderful analogies!" —Martin Fowler, author of Refactoring and UML Distilled "I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I would worry about it being lost." —Kevin Ruland, Management Science, MSG-Logistics "The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful... By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike." —John Lakos, author of Large-Scale C++

Software Design “This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients.” —Eric Vought, Software Engineer “Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company....” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham Straight from the programming trenches, *The Pragmatic Programmer* cuts through the increasing specialization and technicalities of modern software development to examine the core process—taking a requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you’ll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, *The Pragmatic Programmer* illustrates the best practices and major pitfalls of many different aspects of software development. Whether you’re a new coder, an experienced programmer,

or a manager responsible for software projects, use these lessons daily, and you’ll quickly see improvements in personal productivity, accuracy, and job satisfaction. You’ll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You’ll become a Pragmatic Programmer.

Advanced Linux Programming - CodeSourcery LLC 2001-06-11

This is the eBook version of the printed book. If the print book includes a CD-ROM, this content is not included within the eBook version. *Advanced Linux Programming* is divided into two parts. The first covers generic UNIX system services, but with a particular eye towards Linux specific information. This portion of the book will be of use even to advanced programmers who have worked with other Linux systems since it will cover Linux specific details and differences. For programmers without UNIX experience, it will be even more valuable. The second section covers material that is entirely Linux specific. These are truly advanced topics, and are the techniques that the gurus use to build great applications. While this book will focus mostly on the Application Programming Interface (API) provided by the Linux kernel and the C library, a preliminary introduction to the development tools available will allow all who purchase the book to make immediate use of Linux.

TCP/IP Network Administration - Craig Hunt 2002-04-04

This complete guide to setting up and running a TCP/IP network is essential for network administrators, and invaluable for users of home systems that access the Internet. The book starts with the fundamentals - what protocols do and how they work, how addresses and routing are used to move data through the network, how to set up your network connection -- and then covers, in detail, everything you need to know to exchange information via the Internet. Included are discussions on advanced routing protocols (RIPv2, OSPF, and BGP) and the gated software package that implements them, a tutorial on configuring important network services -- including DNS, Apache, sendmail, Samba, PPP, and DHCP -- as well as expanded chapters on troubleshooting and security. *TCP/IP Network Administration* is also a command and syntax reference for important packages such as gated, pppd, named, dhcpd,

and sendmail. With coverage that includes Linux, Solaris, BSD, and System V TCP/IP implementations, the third edition contains: Overview of TCP/IP Delivering the data Network services Getting started M Basic configuration Configuring the interface Configuring routing Configuring DNS Configuring network servers Configuring sendmail Configuring Apache Network security Troubleshooting Appendices include dip, ppd, and chat reference, a gated reference, a dhcpd reference, and a sendmail reference This new edition includes ways of configuring Samba to provide file and print sharing on networks that integrate Unix and Windows, and a new chapter is dedicated to the important task of configuring the Apache web server. Coverage of network security now includes details on OpenSSH, stunnel, gpg, iptables, and the access control mechanism in xinetd. Plus, the book offers updated information about DNS, including details on BIND 8 and BIND 9, the role of classless IP addressing and network prefixes, and the changing role of registrars. Without a doubt, TCP/IP Network Administration, 3rd Edition is a must-have for all network administrators and anyone who deals with a network that transmits data over the Internet.

Distributed Network Systems - Weijia Jia 2006-06-14

Both authors have taught the course of "Distributed Systems" for many years in the respective schools. During the teaching, we feel strongly that "Distributed systems" have evolved from traditional "LAN" based distributed systems towards "Internet based" systems. Although there exist many excellent textbooks on this topic, because of the fast development of distributed systems and network programming/protocols, we have difficulty in finding an appropriate textbook for the course of "distributed systems" with orientation to the requirement of the undergraduate level study for today's distributed technology. Specifically, from - to-date concepts, algorithms, and models to implementations for both distributed system designs and application programming. Thus the philosophy behind this book is to integrate the concepts, algorithm designs and implementations of distributed systems based on network programming. After using several materials of other textbooks and research books, we found that many texts treat the

distributed systems with separation of concepts, algorithm design and network programming and it is very difficult for students to map the concepts of distributed systems to the algorithm design, prototyping and implementations. This book intends to enable readers, especially postgraduates and senior undergraduate level, to study up-to-date concepts, algorithms and network programming skills for building modern distributed systems. It enables students not only to master the concepts of distributed network system but also to readily use the material introduced into implementation practices.

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

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.

C++ Network Programming, Volume I - Douglas Schmidt 2001-12-10

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.

The UNIX-haters Handbook - Simson Garfinkel 1994

This book is for all people who are forced to use UNIX. It is a humorous book--pure entertainment--that maintains that UNIX is a computer virus with a user interface. It features letters from the thousands posted on the Internet's "UNIX-Haters" mailing list. It is not a computer handbook, tutorial, or reference. It is a self-help book that will let readers know they are not alone.

TCP/IP Illustrated, Volume 1 - Kevin R. Fall 2011-11-08

"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.

ABCs of z/OS System Programming: - Paul Rogers 2011-02-10

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 (DFSMSdfp), 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, SDSF, and z/OS delivery and installation Volume 2: z/OS implementation and daily maintenance, defining subsystems, JES2 and JES3, LPA, LNKST, authorized libraries, SMP/E, Language Environment® Volume 3: Introduction to DFSMS, data set basics storage management hardware and software, catalogs, and DFSMS 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

Open Sources - Chris DiBona 1999-01-03

Freely available source code, with contributions from thousands of

programmers around the world: this is the spirit of the software revolution known as Open Source. Open Source has grabbed the computer industry's attention. Netscape has opened the source code to Mozilla; IBM supports Apache; major database vendors have ported their products to Linux. As enterprises realize the power of the open-source development model, Open Source is becoming a viable mainstream alternative to commercial software. Now in *Open Sources*, leaders of Open Source come together for the first time to discuss the new vision of the software industry they have created. The essays in this volume offer insight into how the Open Source movement works, why it succeeds, and where it is going. For programmers who have labored on open-source projects, *Open Sources* is the new gospel: a powerful vision from the movement's spiritual leaders. For businesses integrating open-source software into their enterprise, *Open Sources* reveals the mysteries of how open development builds better software, and how businesses can leverage freely available software for a competitive business advantage. The contributors here have been the leaders in the open-source arena: Brian Behlendorf (Apache) Kirk McKusick (Berkeley Unix) Tim O'Reilly (Publisher, O'Reilly & Associates) Bruce Perens (Debian Project, Open Source Initiative) Tom Paquin and Jim Hamerly (mozilla.org, Netscape) Eric Raymond (Open Source Initiative) Richard Stallman (GNU, Free Software Foundation, Emacs) Michael Tiemann (Cygnus Solutions) Linus Torvalds (Linux) Paul Vixie (Bind) Larry Wall (Perl) This book explains why the majority of the Internet's servers use open-source technologies for everything from the operating system to Web serving and email. Key technology products developed with open-source software have overtaken and surpassed the commercial efforts of billion dollar companies like Microsoft and IBM to dominate software markets. Learn the inside story of what led Netscape to decide to release its source code using the open-source mode. Learn how Cygnus Solutions builds the world's best compilers by sharing the source code. Learn why venture capitalists are eagerly watching Red Hat Software, a company that gives its key product -- Linux -- away. For the first time in print, this book presents the story of the open-source phenomenon told by the

people who created this movement. Open Sources will bring you into the world of free software and show you the revolution.

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.

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 - Syed Mansoor Sarwar 2016-11-03

UNIX: The Textbook, Third Edition provides a comprehensive

introduction to the modern, twenty-first-century UNIX operating system. The book deploys PC-BSD and Solaris, representative systems of the major branches of the UNIX family, to illustrate the key concepts. It covers many topics not covered in older, more traditional textbook approaches, such as Python, UNIX System Programming from basics to socket-based network programming using the client-server paradigm, the Zettabyte File System (ZFS), and the highly developed X Windows-based KDE and Gnome GUI desktop environments. The third edition has been fully updated and expanded, with extensive revisions throughout. It features a new tutorial chapter on the Python programming language and its use in UNIX, as well as a complete tutorial on the git command with Github. It includes four new chapters on UNIX system programming and the UNIX API, which describe the use of the UNIX system call interface for file processing, process management, signal handling, interprocess communication (using pipes, FIFOs, and sockets), extensive coverage of internetworking with UNIX TCP/IP using the client-server software, and considerations for the design and implementation of production-quality client-server software using iterative and concurrent servers. It also includes new chapters on UNIX system administration, ZFS, and container virtualization methodologies using iocage, Solaris Jails, and VirtualBox. Utilizing the authors' almost 65 years of practical teaching experience at the college level, this textbook presents well-thought-out sequencing of old and new topics, well-developed and timely lessons, a Github site containing all of the code in the book plus exercise solutions, and homework exercises/problems synchronized with the didactic sequencing of chapters in the book. With the exception of four chapters on system programming, the book can be used very successfully by a complete novice, as well as by an experienced UNIX system user, in both an informal and formal learning environment. The book may be used in several computer science and information technology courses, including UNIX for beginners and advanced users, shell and Python scripting, UNIX system programming, UNIX network programming, and UNIX system administration. It may also be used as a companion to the undergraduate and graduate level courses on operating system concepts

and principles.

Linux TCP/IP Networking for Embedded Systems - Thomas F. Herbert 2007

Accompanying CD-ROM includes all RFC files mentioned in the book, the Linux source tree and sample protocol family module programs for running, configuring, and testing the NADA protocol family discussed in Ch. 10.

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.

Python Network Programming Cookbook - Pradeeban Kathiravelu 2017-08-09

Discover practical solutions for a wide range of real-world network programming tasks About This Book Solve real-world tasks in the area of network programming, system/networking administration, network monitoring, and more. Familiarize yourself with the fundamentals and functionalities of SDN Improve your skills to become the next-gen network engineer by learning the various facets of Python programming Who This Book Is For This book is for network engineers, system/network administrators, network programmers, and even web application developers who want to solve everyday network-related problems. If you are a novice, you will develop an understanding of the concepts as you progress with this book. What You Will Learn Develop TCP/IP networking client/server applications Administer local machines' IPv4/IPv6 network interfaces Write multi-purpose efficient web clients for HTTP and HTTPS protocols Perform remote system administration

tasks over Telnet and SSH connections Interact with popular websites via web services such as XML-RPC, SOAP, and REST APIs Monitor and analyze major common network security vulnerabilities Develop Software-Defined Networks with Ryu, OpenDaylight, Floodlight, ONOS, and POX Controllers Emulate simple and complex networks with Mininet and its extensions for network and systems emulations Learn to configure and build network systems and Virtual Network Functions (VNF) in heterogeneous deployment environments Explore various Python modules to program the Internet In Detail Python Network Programming Cookbook - Second Edition highlights the major aspects of network programming in Python, starting from writing simple networking clients to developing and deploying complex Software-Defined Networking (SDN) and Network Functions Virtualization (NFV) systems. It creates the building blocks for many practical web and networking applications that rely on various networking protocols. It presents the power and beauty of Python to solve numerous real-world tasks in the area of network programming, network and system administration, network monitoring, and web-application development. In this edition, you will also be introduced to network modelling to build your own cloud network. You will learn about the concepts and fundamentals of SDN and then extend your network with Mininet. Next, you'll find recipes on Authentication, Authorization, and Accounting (AAA) and open and proprietary SDN approaches and frameworks. You will also learn to configure the Linux Foundation networking ecosystem and deploy and automate your networks with Python in the cloud and the Internet scale. By the end of this book, you will be able to analyze your network security vulnerabilities using advanced network packet capture and analysis techniques. Style and approach This book follows a practical approach and covers major aspects of network programming in Python. It provides hands-on recipes combined with short and concise explanations on code snippets. This book will serve as a supplementary material to develop hands-on skills in any academic course on network programming. This book further elaborates network softwarization, including Software-Defined Networking (SDN), Network Functions

Virtualization (NFV), and orchestration. We learn to configure and deploy enterprise network platforms, develop applications on top of them with Python.

Linux for Programmers and Users - Graham Glass 2006

KEY BENEFITS: Offering full coverage of Linux in one source, this book documents the most commonly needed topics for new and experienced Linux users and programmers - including over 100 utilities and their common options. **KEY TOPICS:** Provides a good foundation of understanding for the most often-used Linux utilities. Devotes a chapter to helpful installation information for those who must install their own systems. Includes hundreds of command and code examples throughout. Provides approximately 50 diagrams throughout. Features FTP-able files; code used in the book will be made available on a website hosted by the publisher. **MARKET:** A useful reference for anyone using a Linux platform, including programmers, system administrators, and any user who must understand the operating system outside of a specific application.

The Design and Implementation of the 4.4 BSD Operating System (paperback) - Marshall Kirk McKusick 1996-04-30

This book describes the design and implementation of the BSD operating system--previously known as the Berkeley version of UNIX. Today, BSD is found in nearly every variant of UNIX, and is widely used for Internet services and firewalls, timesharing, and multiprocessing systems. Readers involved in technical and sales support can learn the capabilities and limitations of the system; applications developers can learn effectively and efficiently how to interface to the system; systems programmers can learn how to maintain, tune, and extend the system. Written from the unique perspective of the system's architects, this book delivers the most comprehensive, up-to-date, and authoritative technical information on the internal structure of the latest BSD system. As in the previous book on 4.3BSD (with Samuel Leffler), the authors first update the history and goals of the BSD system. Next they provide a coherent overview of its design and implementation. Then, while explaining key design decisions, they detail the concepts, data structures, and

algorithms used in implementing the system's facilities. As an in-depth study of a contemporary, portable operating system, or as a practical reference, readers will appreciate the wealth of insight and guidance contained in this book. Highlights of the book: Details major changes in process and memory management Describes the new extensible and stackable filesystem interface Includes an invaluable chapter on the new network filesystem Updates information on networking and interprocess communication

Operating Systems - Thomas Anderson 2014

Over the past two decades, there has been a huge amount of innovation in both the principles and practice of operating systems Over the same period, the core ideas in a modern operating system - protection, concurrency, virtualization, resource allocation, and reliable storage - have become widely applied throughout computer science. Whether you get a job at Facebook, Google, Microsoft, or any other leading-edge technology company, it is impossible to build resilient, secure, and flexible computer systems without the ability to apply operating systems concepts in a variety of settings. This book examines the both the principles and practice of modern operating systems, taking important, high-level concepts all the way down to the level of working code. Because operating systems concepts are among the most difficult in computer science, this top to bottom approach is the only way to really understand and master this important material.

Xchg Rax, Rax - xorpd 2014-12-09

; 0x40 assembly riddles "xchg rax,rax" is a collection of assembly gems and riddles I found over many years of reversing and writing assembly code. The book contains 0x40 short assembly snippets, each built to teach you one concept about assembly, math or life in general. Be warned - This book is not for beginners. It doesn't contain anything besides assembly code, and therefore some x86_64 assembly knowledge is required. How to use this book? Get an assembler (Yasm or Nasm is recommended), and obtain the x86_64 instruction set. Then for every snippet, try to understand what it does. Try to run it with different inputs if you don't understand it in the beginning. Look up for instructions you

don't fully know in the Instruction sets PDF. Start from the beginning. The order has meaning. As a final note, the full contents of the book could be viewed for free on my website (Just google "xchg rax,rax").

Network Programming for Microsoft Windows - Anthony Jones 2002
Practical explanations are given of Microsoft's networking APIs. This definitive reference covers the network programming interfaces available on the Windows 98, Windows NT/200, and Windows CE platforms. The CD-ROM features reusable code examples in Visual C++.

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, databases systems, data mining, artificial intelligence, computer networks, network security, distributed and parallel computing.

TCP/IP Sockets in C - Michael J. Donahoo 2009-03-02

TCP/IP Sockets in C: Practical Guide for Programmers, Second Edition is

a quick and affordable way to gain the knowledge and skills needed to develop sophisticated and powerful web-based applications. The book's focused, tutorial-based approach enables the reader to master the tasks and techniques essential to virtually all client-server projects using sockets in C. This edition has been expanded to include new advancements such as support for IPv6 as well as detailed defensive programming strategies. If you program using Java, be sure to check out this book's companion, TCP/IP Sockets in Java: Practical Guide for Programmers, 2nd Edition. Includes completely new and expanded sections that address the IPv6 network environment, defensive programming, and the select() system call, thereby allowing the reader to program in accordance with the most current standards for internetworking. Streamlined and concise tutelage in conjunction with line-by-line code commentary allows readers to quickly program web-based applications without having to wade through unrelated and discursive networking tenets.

Interprocess Communications in Linux - John Shapley Gray 2003
Gray zeroes right in on the key techniques of processes and interprocess communication from primitive communications to the complexities of sockets. The book covers every aspect of UNIX/Linux interprocess communications in sufficient detail to allow experienced programmers to begin writing useful code immediately.

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 Network Programming - W. Richard Stevens 1990
A practical book that explains many of the details that have been considered a mystery, this guidebook focuses on the design, development, and coding of networking software under the UNIX operating system. It begins by showing how a fundamental basic for

networking programming is interprocess communication (IPC), and a requisite for understanding IPC is a knowledge of what constitutes a process. Throughout, the text provides both a description and examples of how and why a particular solution is arrived at.

Programming with POSIX Threads - David R. Butenhof 1993-05-15

With this practical book, you will attain a solid understanding of threads and will discover how to put this powerful mode of programming to work in real-world applications. The primary advantage of threaded programming is that it enables your applications to accomplish more than one task at the same time by using the number-crunching power of multiprocessor parallelism and by automatically exploiting I/O concurrency in your code, even on a single processor machine. The result: applications that are faster, more responsive to users, and often easier to maintain. Threaded programming is particularly well suited to network programming where it helps alleviate the bottleneck of slow network I/O. This book offers an in-depth description of the IEEE operating system interface standard, POSIXAE (Portable Operating System Interface) threads, commonly called Pthreads. Written for experienced C programmers, but assuming no previous knowledge of threads, the book explains basic concepts such as asynchronous programming, the lifecycle of a thread, and synchronization. You then move to more advanced topics such as attributes objects, thread-specific data, and realtime scheduling. An entire chapter is devoted to "real code," with a look at barriers, read/write locks, the work queue manager, and how to utilize existing libraries. In addition, the book tackles one of the thorniest problems faced by thread programmers-debugging-with valuable suggestions on how to avoid code errors and performance problems from the outset. Numerous annotated examples are used to illustrate real-world concepts. A Pthreads mini-reference and a look at future standardization are also included.

Advanced UNIX Programming - Marc J. Rochkind 2004-04-29

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.

Computer Networking: A Top-Down Approach Featuring the Internet, 3/e - James F. Kurose 2005

[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 Phoenix Project - Gene Kim 2018-02-06

Over a half-million sold! The sequel, The Unicorn Project, is coming Nov 26 “Every person involved in a failed IT project should be forced to read this book.”—TIM O’REILLY, Founder & CEO of O’Reilly Media
“The Phoenix Project is a must read for business and IT executives who are struggling with the growing complexity of IT.”—JIM WHITEHURST, President and CEO, Red Hat, Inc. Five years after this sleeper hit took on the world of IT and flipped it on its head, the 5th Anniversary Edition of The Phoenix Project continues to guide IT in the DevOps revolution. In this newly updated and expanded edition of the bestselling The Phoenix Project, co-author Gene Kim includes a new afterword and a deeper delve into the Three Ways as described in The DevOps Handbook. Bill, an IT manager at Parts Unlimited, has been tasked with taking on a project critical to the future of the business, code named Phoenix Project. But the project is massively over budget and behind schedule. The CEO demands Bill must fix the mess in ninety days or else Bill's entire department will be outsourced. With the help of a prospective board member and his mysterious philosophy of The Three Ways, Bill starts to see that IT work has more in common with a manufacturing plant work

than he ever imagined. With the clock ticking, Bill must organize work flow streamline interdepartmental communications, and effectively serve the other business functions at Parts Unlimited. In a fast-paced and entertaining style, three luminaries of the DevOps movement deliver a story that anyone who works in IT will recognize. Readers will not only learn how to improve their own IT organizations, they'll never view IT the same way again. “This book is a gripping read that captures brilliantly the dilemmas that face companies which depend on IT, and offers real-world solutions.”—JEZ HUMBLE, Co-author of Continuous Delivery, Lean Enterprise, Accelerate, and The DevOps Handbook ——— “I’m delighted at how The Phoenix Project has reshaped so many conversations in technology. My goal in writing The Unicorn Project was to explore and reveal the necessary but invisible structures required to make developers (and all engineers) productive, and reveal the devastating effects of technical debt and complexity. I hope this book can create common ground for technology and business leaders to leave the past behind, and co-create a better future together.”—Gene Kim, November 2019

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

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