

Introduction To Sockets Programming In C Using Tcp Ip

Well before Ajax and Microsoft's Windows Presentation Foundation hit the scene, Macromedia offered the first method for building web pages with the responsiveness and functionality of desktop programs with its Flash-based "Rich Internet Applications". Now, new owner Adobe is taking Flash and its powerful capabilities beyond the Web and making it a full-fledged development environment. Rather than focus on theory, the ActionScript 3.0 Cookbook concentrates on the practical application of ActionScript, with more than 300 solutions you can use to solve a wide range of common coding dilemmas. You'll find recipes that show you how to: Detect the user's Flash Player version or their operating system Build custom classes Format dates and currency types Work with strings Build user interface components Work with audio and video Make remote procedure calls using Flash Remoting and web services Load, send, and search XML data And much, much more ... Each code recipe presents the Problem, Solution, and Discussion of how you can use it in other ways or personalize it for your own needs, and why it works. You can quickly locate the recipe that most closely matches your situation and get the solution without reading the whole book to understand the underlying code. Solutions progress from short recipes for thornier riddles, and the discussions offer a deeper analysis for resolving similar issues in the future, along with quick links to modular ActionScript pieces together to create rock-solid solutions for Flex 2 and Flash applications. When you're not sure how ActionScript 3.0 works or how to approach a specific programming dilemma, you can simply pick up the book, flip to the relevant recipe(s), and quickly find the solution you're looking for. Adobe Developer Library is a co-publishing partnership between O'Reilly Media and Adobe Systems, Inc. and is designed to produce the number one information resources for developers who use Adobe technologies. Created in 2006, the Adobe Developer Library is the official source for comprehensive learning solutions to help developers create expressive and interactive web applications that can reach virtually anyone on any platform. With top-notch books and innovative online resources covering the latest in rich Internet application development, the Adobe Developer Library offers expert training and in-depth resources, straight from the source.

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.

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.

Demonstrates socket programming fundamentals, including writing servers, creating secure applications, address conversion functions, socket types, and TCP/IP protocols and options

Introduction to Networking

Build fast and resilient network servers and clients by leveraging Rust's memory-safety and concurrency features

Essential Skills for Using and Securing Networks

Learning Network Programming with Java

A Top-Down Approach

Java Network Programming

This is an introduction to Bluetooth programming, with a specific focus on developing real code. The authors discuss the major concepts and techniques involved in Bluetooth programming, with special emphasis on how they relate to other networking technologies. They provide specific descriptions and examples for creating applications in a number of programming languages and environments including Python, C, Java, GNU/Linux, Windows XP, Symbian Series 60, and Mac OS X. No previous experience with Bluetooth is assumed, and the material is suitable for anyone with some programming background. The authors place special emphasis on the essential concepts and techniques of Bluetooth programming, starting simply and allowing the reader to quickly master the basic concepts before addressing advanced features.

Nowadays, configuring a network and automating security protocols are quite difficult to implement. However, using Python makes it easy to automate this whole process. This book explains the process of using Python for building networks, detecting network errors, and performing different security protocols using Python Scripting.

** 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.*

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.

Extreme C

Practical Systems Programming with C

Beej's Guide to Network Programming

Hands-On Network Programming with C

Hands-On Network Programming with C# and .NET Core

44 Tips to Improve Your Network Programs

"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.

Achieve improved network programmability and automation by leveraging powerful network programming concepts, algorithms, and tools Key FeaturesDeal with remote network servers using SSH, FTP, SNMP and LDAP protocols.Design multi threaded and event-driven architectures for asynchronous servers programming.Leverage your Python programming skills to build powerful network applicationsBook Description Network programming has always been a demanding task. With full-featured and well-documented libraries all the way up the stack, Python makes network programming the enjoyable experience it should be. Starting with a walk through of today's major networking protocols, through this book, you'll learn how to employ Python for network programming, how to request and retrieve web resources, and how to extract data in major formats over the web. You will utilize Python for emailing using different protocols, and you'll interact with remote systems and IP and DNS networking. You will cover the connection of networking devices and configuration using Python 3.7, along with cloud-based network management tasks using Python. As the book progresses, socket programming will be covered, followed by how to design servers, and the pros and cons of multithreaded and event-driven architectures. You'll develop practical client-side applications, including web API clients, email clients, SSH, and FTP. These applications will also be implemented through existing web application frameworks. What you will learnExecute Python modules on networking toolsAutomate tasks regarding the analysis and extraction of information from a networkGet to grips with asynchronous programming modules available in PythonGet to grips with IP address manipulation modules using Python programmingUnderstand the main frameworks available in Python that are focused on web applicationManipulate IP addresses and perform CIDR calculationsWho this book is for If you're a Python developer or a system administrator with Python experience and you're looking to take your Python programming, then this book is for you. If you're a network engineer or a network professional aiming to be more productive and efficient in networking programmability and automation then this book would serve as a useful resource. Basic knowledge of Python is assumed.

*Python Socket Programming: A Guide for Programmers is a hands-on, application-centric approach to multicasting (as opposed to a network-centric one) that is filled with examples, ideas, and experimentation. Each example builds on the last to introduce multicast concepts, frameworks, and APIs in an engaging manner that does not burden the reader with lots of theory and jargon. The book is an introduction to multicasting but assumes that the reader has a background in network programming and is proficient in C or Java. After reading the book, you will have a firm grasp on how to write a multicast program. Author * of instructor and application programmer is reflected in this rich instructional and practical approach to the subject material Only book available that provides a clear, concise, application-centric approach to programming multicast applications and covers several languages—C, Java, and C# on the .NET platform Covers important topics like service models, testing reachability, and addressing and scoping Includes numerous examples and exercises for programmers and students to test what they have learned*

** 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.*

Using Internet Sockets

Introduction to Computer Networks and Cybersecurity

Network Programming with Rust

Taking you to the limit in Concurrency, OOP, and the most advanced capabilities of C

UNIX Network Programming

A complete guide to build and deploy strong networking capabilities using Python 3.7 and Ansible , 2nd Edition

Harness the hidden power of Java to build network-enabled applications with lower network traffic and faster processes About This Book Learn to deliver superior server-to-server communication through the networking channels Gain expertise of the networking features of your own applications to support various network architectures such as client/server and peer-to-peer Explore the issues that impact scalability, affect security, and allow applications to work in a heterogeneous environment Who This Book Is For Learning Network Programming with Java is oriented towards those who use network technologies to enhance the utility of their applications. You should have a working knowledge of Java and an interest in learning the latest in network programming techniques using Java. No prior experience with network development or special software beyond the Java SDK is needed. Upon completion of the book, beginner and experienced developers will be able to use Java to access resources across a network and the Internet. What You Will Learn Connect to other applications using sockets Use channels and filters to enhance communication between applications Access network services and develop client/server applications Explore the critical elements of peer-to-peer applications and current technologies available Use UDP to perform multicasting Address scalability through the use of core and advanced threading techniques Incorporate techniques into an application to make it more secure Configure and address interoperability issues to enable your applications to work in a heterogeneous environment In Detail Network-aware applications are becoming more prevalent and play an ever-increasing role in the world today. Connecting and using an Internet-based service is a frequent requirement for many applications. Java provides numerous classes that have evolved over the years to meet evolving network needs. These range from low-level socket and IP-based approaches to those encapsulated in software services. This book explores how Java supports networks, starting with the basics and then advancing to more complex topics. An overview of each relevant network technology is presented followed by detailed examples of how to use Java to support these technologies. We start with the basics of networking and then explore how Java supports the development of client/server and peer-to-peer applications. The NIO packages are examined as well as multitasking and how network applications can address practical issues such as security. A discussion on networking concepts will put many network issues into perspective and let you focus on the appropriate technology for the problem at hand. The examples used will provide a good starting point to develop similar capabilities for many of your network needs. Style and approach Each network technology's terms and concepts are introduced first. This is followed up with code examples to explain these technologies. Many of the examples are supplemented with alternate Java 8 solutions when appropriate. Knowledge of Java 8 is not necessary but these examples will help you better understand the power of Java 8.

Advanced Guide to Python 3 Programming delves deeply into a host of subjects that you need to understand if you are to develop sophisticated real-world programs. Each topic is preceded by an introduction followed by more advanced topics, along with numerous examples, that take you to an advanced level. There are nine different sections within the book covering Computer Graphics (including GUIs), Games, Testing, File Input and Output, Databases Access, Logging, Concurrency and Parallelism, Reactive programming, and Networking. Each section is self-contained and can either be read on its own or as part of the book as a whole. This book is aimed at the those who have learnt the basics of the Python 3 language but want to delve deeper into Python 's eco system of additional libraries and modules, to explore concurrency and parallelism, to create impressive looking graphical interfaces, to work with databases and files and to provide professional logging facilities.

UNIX, UNIX LINUX & UNIX TCL/TK. Write software that makes the most effective use of the Linux system, including the kernel and core system libraries. The majority of both Unix and Linux code is still written at the system level, and this book helps you focus on everything above the kernel, where applications such as Apache, bash, cp, vim, Emacs, gcc, gdb, libc, ls, mv, and X exist. Written primarily for engineers looking to program at the low level, this updated edition of Linux System Programming gives you an understanding of core internals that makes for better code, no matter where it appears in the stack. -- Provided by publisher.

This book demystifies the amazing architecture and protocols of computers as they communicate over the Internet. While very complex, the Internet operates on a few relatively simple concepts that anyone can understand. Networks and networked applications are embedded in our lives. Understanding how these technologies work is invaluable. This book was written for everyone - no technical knowledge is required!While this book is not specifically about the Network+ or CCNA certifications, it as a way to give students interested in these certifications a starting point

TCP/IP Sockets in Java

Advanced Guide to Python 3 Programming

TCP/IP Sockets in C

Building Networked Games and Virtual Environments

Leverage Python scripts and libraries to overcome networking and security issues

How the Internet Works

*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*

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.) How prepared are you to build fast and efficient web applications? This eloquent book provides what every web developer should know about the network, from fundamental limitations that affect performance to major innovations for building even more powerful browser applications—including HTTP 2.0 and XHR improvements, Server-Sent Events (SSE), WebSocket, and WebRTC. Author Ilya Grigorik, a web performance engineer at Google, demonstrates performance optimization best practices for TCP, UDP, and TLS protocols, and explains unique wireless and mobile network optimization requirements. You'll then dive into performance characteristics of technologies such as HTTP 2.0, client-side network scripting with XHR, real-time streaming with SSE and WebSocket, and P2P communication with WebRTC. Deliver superlative TCP, UDP, and TLS performance Speed up network performance over 3G/4G mobile networks Develop fast and energy-efficient mobile applications Address bottlenecks in HTTP 1.x and other browser protocols Plan for and deliver the best HTTP 2.0 performance Enable efficient real-time streaming in the browser Create efficient peer-to-peer videoconferencing and low-latency applications with real-time WebRTC transports

A comprehensive guide to understanding network architecture, communication protocols, and network analysis to build secure applications compatible with the latest versions of C# 8 and .NET Core 3.0 Key FeaturesExplore various network architectures that make distributed programming possibleLearn how to make reliable software by writing secure interactions between clients and serversUse .NET Core for network device automation, DevOps, and software-defined networkingBook Description The C# language and the .NET Core application framework provide the tools and patterns required to make the discipline of network programming as intuitive and enjoyable as any other aspect of C# programming. With the help of this book, you will discover how the C# language and the .NET Core framework make this possible. The book begins by introducing the core concepts of network programming and what distinguishes this field of programming from other disciplines. After this, you will gain insights into concepts such as transport protocols, sockets and ports, and remote data streams, which will provide you with a holistic understanding of how network software fits into larger distributed systems. The book will also explore the intricacies of how network software is implemented in a more explicit context, by covering sockets, connection strategies such as Transmission Control Protocol (TCP) and User Datagram Protocol (UDP), asynchronous processing, and threads. You will then be able to work through code examples for TCP servers, web APIs served over HTTP, and a Secure Shell (SSH) client. By the end of this book, you will have a good understanding of the Open Systems Interconnection (OSI) network stack, the various communication protocols for that stack, and the skills that are essential to implement those protocols using the C# programming language and the .NET Core framework. What you will learnUnderstand the breadth of C#'s network programming utility classesUtilize network-layer architecture and organizational strategiesImplement various communication and transport protocols within C#Discover hands-on examples of distributed application developmentGain hands-on experience with asynchronous socket programming and streamsLearn how C# and the .NET Core runtime interact with a hosting networkUnderstand a full suite of network programming tools and featuresWho this book is for If you're a .NET developer or a system administrator with .NET experience and are looking to get started with network programming, then this book is for you. Basic knowledge of C# and .NET is assumed, in addition to a basic understanding of common web protocols and some high-level distributed system designs.

What every web developer should know about networking and web performance

Linux Socket Programming

Multicast Sockets

Advanced Perl Programming

Computer Networking

Code Secure and Reliable Network Services from Scratch

A comprehensive guide to programming with network sockets, implementing Internet protocols, designing IoT devices, and much more with C Key FeaturesLeverage your C or C++ programming skills to build powerful network applicationsGet to grips with a variety of network protocols that allow you to load web pages, send emails, and do much moreWrite portable network code for operating systems such as Windows, Linux, and macOSBook 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 learnUncover cross-platform socket programming APIsImplement techniques for supporting IPv4 and IPv6Understand how TCP and UDP connections work over IPDiscover how hostname resolution and DNS workInterface with web APIs using HTTP and HTTPSAcquire 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.

This new third edition of this highly regarded introduction to Java networking programming has been thoroughly revised to cover all of the 100+ significant updates to Java Developers Kit (JDK) 1.5. It is a clear, complete introduction to developing network programs (both applets and applications) using Java, covering everything from networking fundamentals to remote method invocation (RMI).Java Network Programming, 3rd Edition includes chapters on TCP and UDP sockets, multicasting protocol and content handlers, servlets, multithreaded network programming, I/O, HTML parsing and display, the Java Mail API, and the Java Secure Sockets Extension. There's also significant information on the new I/O API that was developed in large part because of the needs of network programmers. This invaluable book is a complete, single source guide to writing sophisticated network applications. Packed with useful examples, it is the essential resource for any serious Java developer.

"This book is the best way for beginning developers to learn wxWidgets programming in C++. It is a must-have for programmers thinking of using wxWidgets and those already using it." —Mitch Kapor, founder of Lotus Software and the Open Source Applications Foundation Build advanced cross-platform applications that support native look-and-feel on Windows, Linux, Unix, Mac OS X, and even Pocket PC Master wxWidgets from start to finish—even if you've never built GUI applications before Leverage advanced wxWidgets capabilities: networking, multithreading, streaming, and more Foreword by Mitch Kapor, founder, Lotus Development and Open Source Application Foundation wxWidgets is an easy-to-use, open source C++ API for writing GUI applications that run on Windows, Linux, Unix, Mac OS X, and even Pocket PC-supporting each platform's native look and feel with virtually no additional coding. Now, its creator and two leading developers teach you all you need to know to write robust cross-platform software with wxWidgets. This book covers everything from dialog boxes to drag-and-drop, from networking to multithreading. It includes all the tools and code you need to get great results, fast. From AMD to AOL, Lockheed Martin to Xerox, world-class developers are using wxWidgets to save money, increase efficiency, and reach new markets. With this book, you can, too. wxWidgets quickstart: event/input handling, window layouts, drawing, printing, dialogs, and more Working with window classes, from simple to advanced Memory management, debugging, error checking, internationalization, and other advanced topics Includes extensive code samples for Windows, Linux (GTK+), and Mac OS X

Dive into key topics in network architecture and Go, such as data serialization, application level protocols, character sets and encodings. This book covers network architecture and gives an overview of the Go language as a primer, covering the latest Go release. Beyond the fundamentals, Network Programming with Go covers key networking and security issues such as HTTP and HTTPS, templates, remote procedure call (RPC), web sockets including HTML5 web sockets, and more. Additionally, author Jan Newmarch guides you in building and connecting to a complete web server based on Go. This book can serve as both as an essential learning guide and reference on Go networking. What You Will Learn Master network programming with Go Carry out data serialization Use application-level protocols Manage character sets and encodings Deal with HTTP(s) Build a complete Go-based web server Work with RPC, web sockets, and more Who This Book Is For Experienced Go programmers and other programmers with some experience with the Go language.

Mastering Complexity with ACE and Patterns, Portable Documents

Network Programming with Go

Linux Socket Programming by Example

Bluetooth Essentials for Programmers

WinSock Programming Fundamentals: A Compilation

IPv6 Network Programming

Computer Networkingprovides a top-down approach to this study by beginning with applications-level protocols and then working down the protocol stack. Focuses on a specific motivating example of a network—the Internet—as well as introducing students to protocols in a more theoretical context. New short "interlude" on "putting it all together" that follows the coverage of application, transport, network, and datalink layers ties together the various components of the Internet architecture and identifying aspects of the architecture that have made the Internet so successful. A new chapter covers wireless and mobile networking, including in-depth coverage of Wi-Fi, Mobile IP and GSM. Also included is expanded coverage on BGP, wireless security and DNS. This book is designed for readers who need to learn the fundamentals of computer networking. It also has extensive material, on the very latest technology, making it of great interest to networking professionals.

Practical examples 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++.

The Unix model; Interprocess communication; A network primer; Communication protocols; Berkeley sockets; System V transport layer interface; Library routines; Sockets; 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.

The networking capabilities of the Java platform have been extended considerably since the first edition of the book. This new edition covers version 1.5-1.7, the most current iterations, as well as making the following improvements: The API (Application programming interface) reference sections in each chapter, which describe the relevant parts of each class, have been replaced with (i) a summary section that lists the classes and methods used in the code, and (ii) a "gotchas" section that mentions nonobvious or poorly-documented aspects of the objects. In addition, the book covers several new classes and capabilities introduced in the last few revisions of the Java platform. New abstractions to be covered include NetworkInterface, InterfaceAddress, Inet4Address, SocketAddress/InetSocketAddress, Executor, and others; extended access to low-level network information; support for IPv6; more complete access to socket options; and scalable I/O. The example code is also modified to take advantage of new language features such as annotations, enumerations, as well as generics and implicit iterators where appropriate. Most Internet applications use sockets to implement network communication protocols. This book's focused, tutorial-based approach helps the reader master the tasks and techniques essential to virtually all client-server projects using sockets in Java. Chapter 1 provides a general overview of networking concepts to allow readers to synchronize the concepts with terminology. Chapter 2 introduces the mechanics of simple clients and servers. Chapter 3 covers basic message construction and parsing. Chapter 4 then deals with techniques used to build more robust clients and servers. Chapter 5 (NEW) introduces the scalable interface facilities which were introduced in Java 1.5, including the buffer and channel abstractions. Chapter 6 discusses the relationship between the programming constructs and the underlying protocol implementations in more detail. Programming concepts are introduced through simple program examples accompanied by line-by-line code commentary that describes the purpose of every part of the program. No other resource presents so concisely or so effectively the material necessary to get up and running with Java sockets programming. Focused, tutorial-based instruction in key sockets programming techniques allows reader to quickly come up to speed on Java applications. Concise and up-to-date coverage of the most recent platform (1.7) for Java applications in networking technology.

An Introduction to Network Programming with Java

ActionScript 3.0 Cookbook

Talking Directly to the Kernel and C Library

C++ Network Programming, Volume I

Build robust network applications with C# and .NET Core

Practical Guide for Programmers

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.

This book teaches systems programming with the latest versions of C through a set of practical examples and problems. It covers the development of a handful of programs, implementing efficient coding examples. Practical Systems Programming with C contains three main parts: getting your hands dirty with C programming; practical systems programming using concepts such as processes, signals, and inter-process communication; and advanced socket-based programming which consists of developing a network application for reliable communication. You will be introduced to a marvelous ecosystem of systems programming with C, from handling basic system utility commands to communicating through socket programming. With the help of socket programming you will be able to build client-server applications in no time. The "secret sauce" of this book is its curated list of topics and solutions, which fit together through a set of different pragmatic examples; each topic is covered from scratch in an easy-to-learn way. On that journey, you'll focus on practical implementations and an outline of best practices and potential pitfalls. The book also includes a bonus chapter with a list of advanced topics and directions to grow your skills. What You Will Learn Program with operating systems using the latest version of C Work with Linux Carry out multithreading with C Examine the POSIX standard Work with files, directories, processes, and signals Explore IPC and how to work with it Who This Book Is For Programmers who have an exposure to C programming and want to learn systems programming. This book will help them to learn about core concepts of operating systems with the help of C programming. .

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.

On its own, C# simplifies network programming. Combine it with theprecise instruction found in C# Network Programming, and you'llfind that building network applications is easier and quicker thanever. This book helps newcomers get started with a look at the basicsof network programming as they relate to C#, including thelanguage's network classes, the Winsock interface, and

DNSresolution. Spend as much time here as you need, then dig into thecore topics of the network layer. You'll learn to make socketsconnections via TCP and "connectionless" connections via UDP.You'll also discover just how much help C# gives you with some ofyour toughest chores, such as asynchronous socket programming,multithreading, and multicasting. Network-layer techniques are just a means to an end, of course,and so this book keeps going, providing a series of detailedapplication-layer programming examples that show you how to workwith real protocols and real network environments to build andimplement a variety of applications. Use SNMP to manage networkdevices, SMTP to communicate with remote mail servers, and HTTP toWeb-enable your applications. And use classes native to C# to queryand modify Active Directory entries. Rounding it all out is plenty of advanced coverage to push yourC# network programming skills to the limit. For example, you'lllearn two ways to share application methods across the network:using Web services and remoting. You'll also master the securityfeatures intrinsic to C# and .NET--features that stand to benefitall of your programming projects.

Cross-Platform GUI Programming with wxWidgets
Solutions for Flash Platform and Flex Application Developers
The Definitive Guide to Linux Network Programming
Foundations of Python Network Programming
C# Network Programming
Mastering Python for Networking and Security

Push the limits of what C - and you - can do, with this high-intensity guide to the most advanced capabilities of C Key FeaturesMake the most of C's low-level control, flexibility, and high performanceA comprehensive guide to C's most powerful and challenging featuresA thought-provoking guide packed with hands-on exercises and examplesBook Description There's a lot more to C than knowing the language syntax. The industry looks for developers with a rigorous, scientific understanding of the principles and practices. Extreme C will teach you to use C's advanced low-level power to write effective, efficient systems. This intensive, practical guide will help you become an expert C programmer. Building on your existing C knowledge, you will master preprocessor directives, macros, conditional compilation, pointers, and much more. You will gain new insight into algorithm design, functions, and structures. You will discover how C helps you squeeze maximum performance out of critical, resource-constrained applications. C still plays a critical role in 21st-century programming, remaining the core language for precision engineering, aviations, space research, and more. This book shows how C works with Unix, how to implement OO principles in C, and fully covers multi-processing. In Extreme C, Armini encourages you to think, question, apply, and experiment for yourself. The book is essential for anybody who wants to take their C to the next level. What you will learnBuild advanced C knowledge on strong foundations, rooted in first principlesUnderstand memory structures and compilation pipeline and how they work, and how to make most out of themApply object-oriented design principles to your procedural C codeWrite low-level code that's close to the hardware and squeezes maximum performance out of a computer systemMaster concurrency, multithreading, multi-processing, and integration with other languagesUnit Testing and debugging, build systems, and inter-process communication for C programmingWho this book is for Extreme C is for C programmers who want to dig deep into the language and its capabilities. It will help you make the most of the low-level control C gives you.

The 1st edition of this book was equally useful as an undergraduate textbook and as the lucid, no-nonsense guide required by IT professionals, featuring many code examples, screenshots and exercises. The new 2nd edition adds revised language reflecting significant changes in J2SE 5.0: update of support software; non-blocking servers; DataSource interface and Data Access Objects for connecting to remote databases.

Networked Graphics equips programmers and designers with a thorough grounding in the techniques used to create truly network-enabled computer graphics and games. Written for graphics/game/VE developers and students, it assumes no prior knowledge of networking. The text offers a broad view of what types of different architectural patterns can be found in current systems, and readers will learn the tradeoffs in achieving system requirements on the Internet. It explains the foundations of networked graphics, then explores real systems in depth, and finally considers standards and extensions. Numerous case studies and examples with working code are featured throughout the text, covering groundbreaking academic research and military simulation systems, as well as industry-leading game designs. Everything designers need to know when developing networked graphics and games is covered in one volume - no need to consult multiple sources. The many examples throughout the text feature real simulation code in C++ and Java that developers can use in their own design experiments. Case studies describing real-world systems show how requirements and constraints can be managed.

Learn to write servers and network clients using Rust's low-level socket classes with this guide Key Features Build a solid foundation in Rust while also mastering important network programming details Leverage the power of a number of available libraries to perform network operations in Rust Develop a fully functional web server to gain the skills you need, fast Book Description Rust is low-level enough to provide fine-grained control over memory while providing safety through compile-time validation. This makes it uniquely suitable for writing low-level networking applications. This book is divided into three main parts that will take you on an exciting journey of building a fully functional web server. The book starts with a solid introduction to Rust and essential networking concepts. This will lay a foundation for, and set the tone of, the entire book. In the second part, we will take an in-depth look at using Rust for networking software. From client-server networking using sockets to IPv4/v6, DNS, TCP, UDP, you will also learn about serializing and deserializing data using serde. The book shows how to communicate with REST servers over HTTP. The final part of the book discusses asynchronous network programming using the Tokio stack. Given the importance of security for modern systems, you will see how Rust supports common primitives such as TLS and public-key cryptography. After reading this book, you will be more than confident enough to use Rust to build effective networking software What you will learn Appreciate why networking is important in implementing distributed systems Write a non-asynchronous echo server over TCP that talks to a client over a network Parse JSON and binary data using parser combinators such as nom Write an HTTP client that talks to the server using reqwest Modify an existing Rust HTTP server and add SSL to it Master asynchronous programming support in Rust Use external packages in a Rust project Who this book is for This book is for software developers who want to write networking software with Rust. A basic familiarity with networking concepts is assumed. Beginner-level knowledge of Rust will help but is not necessary.

Pragmatic Example Applications in Linux and Other Operating Systems

Learning Python Networking

High Performance Browser Networking

Linux System Programming

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

Network Programming for Microsoft Windows

Covers advanced features of Perl, how the Perl interpreter works, and presents areas of modern computing technology such as networking, user interfaces, persistence, and code generation.

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.

If a network is not secure, how valuable is it? Introduction to Computer Networks and Cybersecurity takes an integrated approach to networking and cybersecurity, highlighting the interconnections so that you quickly understand the complex design issues in modern networks. This full-color book uses a wealth of examples and illustrations to effective

UNIX Network Programming: The sockets networking API

Effective TCP/IP Programming

Networked Graphics