

C Network Programming, Volume I: Mastering Complexity With ACE And Patterns: Mastering Complexity With ACE And Patterns: Resolving Complexity Using ACE And Patterns Vol 1 (C In Depth)

Learn effective C++ network programming with Boost.Asio and become a proficient C++ network programmer About This Book Learn efficient C++ network programming with minimum coding using Boost.Asio Your one-stop destination to everything related to the Boost.Asio library Explore the fundamentals of networking to choose designs with more examples, and learn the basics of Boost.Asio Who This Book Is For This book is for C++ Network programmers with basic knowledge of network programming, but no knowledge of how to use Boost.Asio for network programming. What You Will Learn Prepare the tools to simplify network programming in C++ using Boost.Asio Explore the networking concepts of IP addressing, TCP/IP ports and protocols, and LAN topologies Get acquainted with the usage of the Boost libraries Get to know more about the content of Boost.Asio network programming and Asynchronous programming Establish communication between client and server by creating client-server application Understand the various functions inside Boost.Asio C++ libraries to delve into network programming Discover how to debug and run the code successfully In Detail Boost.Asio is a C++ library used for network programming operations. Organizations use Boost because of its productivity. Use of these high-quality libraries speed up initial development, result in fewer bugs, reduce reinvention-of-the-wheel, and cut long-term maintenance costs. Using Boost libraries gives an organization a head start in adopting new technologies. This book will teach you C++ Network programming using synchronous and asynchronous operations in Boost.Asio with minimum code, along with the fundamentals of Boost, server-client applications, debugging, and more. You will begin by preparing and setting up the required tools to simplify your network programming in C++ with Boost.Asio. Then you will learn about the basic concepts in networking such as IP addressing, TCP/IP protocols, and LAN with its topologies. This will be followed by an overview of the Boost libraries and their usage. Next you will get to know more about Boost.Asio and its concepts related to network programming. We will then go on to create a client-server application, helping you to understand the networking concepts. Moving on, you will discover how to use all the functions inside the Boost.Asio C++ libraries. Lastly, you will understand how to debug the code if there are errors found and will run the code successfully. Style and approach An example-oriented book to show you the basics of networking and help you create a network application simply using Boost.Asio, with more examples for you to get up and running with Boost.Asio quickly.

Over 25 hands-on recipes to create robust and highly-efficient cross-platform distributed applications with the Boost.Asio library About This Book Build highly efficient distributed applications with ease Enhance your cross-platform network programming skills with one of the most reputable C++ libraries Find solutions to real-world problems related to network programming with ready-to-use recipes using this detailed and practical handbook Who This Book Is For If you want to enhance your C++ network

programming skills using the Boost.Asio library and understand the theory behind development of distributed applications, this book is just what you need. The prerequisite for this book is experience with general C++11. To get the most from the book and comprehend advanced topics, you will need some background experience in multithreading. What You Will Learn Boost your working knowledge of one of the most reputable C++ networking libraries—Boost.Asio Familiarize yourself with the basics of TCP and UDP protocols Create scalable and highly-efficient client and server applications Understand the theory behind development of distributed applications Increase the security of your distributed applications by adding SSL support Implement a HTTP client easily Use iostreams, scatter-gather buffers, and timers In Detail Starting with recipes demonstrating the execution of basic Boost.Asio operations, the book goes on to provide ready-to-use implementations of client and server applications from simple synchronous ones to powerful multithreaded scalable solutions. Finally, you are presented with advanced topics such as implementing a chat application, implementing an HTTP client, and adding SSL support. All the samples presented in the book are ready to be used in real projects just out of the box. As well as excellent practical examples, the book also includes extended supportive theoretical material on distributed application design and construction. Style and approach This book is a set of recipes, each containing the statement and description of a particular practical problem followed by code sample providing the solution to the problem and detailed step-by-step explanation. Recipes are grouped by topic into chapters and ordered by the level of complexity from basic to advanced.

* 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.

This practical book offers the knowledge and code you need to create cutting-edge mobile applications and games for the iPhone and iPod Touch, using Apple's iPhone SDK. iPhone SDK Application Development introduces you to this development paradigm and the Objective-C language it uses with numerous examples, and also walks you through the many SDK frameworks necessary for designing full-featured applications. This book will help you: Design user interface elements with Interface Builder and the UI Kit framework Create application controls, such as windows and navigation bars Build and manage layers and transformations using Core Graphics and Quartz Core Mix and play sound files using AVFoundation, and record and play back digital sound streams using Audio Toolbox Handle network programming with the CFNetwork framework Use the Core Location framework to interact with the iPhone's GPS Add movie players to your application iPhone SDK Application Development will benefit experienced developers and those just starting out on the iPhone. Important development concepts are explained thoroughly, and enough advanced examples are provided to make this book a great reference once you become an expert.

UNIX Network Programming

Effective C

Foundations of Python Network Programming

The Rust Programming Language (Covers Rust 2018)

44 Tips to Improve Your Network Programs

Code Secure and Reliable Network Services from Scratch

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

* 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. Most Internet applications use sockets to implement network communication protocols. TCP/IP Sockets in Java: Practical Guide for Programmers, with its focused, tutorial-based coverage, helps you master the tasks and techniques essential to virtually all client-server projects using sockets in Java. Later chapters teach you to implement more specialized functionality; incisive discussions of programming constructs and protocol implementations equip you with a deeper understanding that is invaluable for meeting future challenges. No other resource presents so concisely or so effectively the exact material you need to get up and running with Java sockets programming right away. For those who program using the C language, be sure to check out this book's companion, TCP/IP Sockets in C: Practical Guide for Programmers. Concise, no-nonsense explanations of issues often troublesome for students, including message construction and parsing, underlying mechanisms and Java I/O Comprehensive example-based coverage of the most important TCP/IP techniques-including iterative and threaded servers, timeouts and asynchronous message processing Includes a detailed, easy-to-use reference to the relevant JAVA class libraries Provides a guide to common errors and a reference offering detailed documentation of the sockets interface Perfect for a practitioner who may even want just to "look into" this technology. Provides tutorial-based instruction in key sockets programming techniques, focusing exclusively on Jva and complemented by example code. Covers challenging sockets programming issues: message construction and parsing, underlying TCP/IP protocol mechanisms, Java I/O, iterate and threaded servers, and timeouts. Includes references to the relevant Java class libraries that often go beyond the "official" Java documentation in clarity and explanation.

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.

Network Programming for Microsoft Windows

C # NETWORK PROGRAMMING(CD1□□□)

Network Programming in C

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

Hands-On Neural Network Programming with C#

With C# and Visual Basic .NET

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.

An advanced, code-intensive guide to programming design for local area networking. Includes ready-to-use applications with source codes and customizing tips.

On its own, C# simplifies network programming. Combine it with the precise instruction found in C# Network Programming, and you'll find that building network applications is easier and quicker than ever. This book helps newcomers get started with a look at the basics of network programming as they relate to C#, including the language's network classes, the Winsock interface, and DNS resolution. Spend as much time here as you need, then dig into the core topics of the network layer. You'll learn to make socket connections via TCP and "connectionless" connections via UDP. You'll also discover just how much help C# gives you with some of your 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 detailed application-layer programming examples that show you how to work with real protocols and real network environments to build and implement a variety of applications. Use SNMP to manage network devices, SMTP to communicate with remote mail servers, and HTTP to Web-enable your applications. And use classes native to C# to query and modify Active Directory entries. Rounding it all out is plenty of advanced coverage to push your C# network programming skills to the limit. For example, you'll learn two ways to share application methods across the network: using Web services and remoting. You'll also master the security features intrinsic to C# and .NET--features that stand to benefit all of your programming projects.

"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.

TCP/IP Sockets in C#

Network Programming in .NET

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

Occupational Outlook Handbook

An Introduction to Professional C Programming

Extreme C

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.

This volume focuses on the underlying sockets class, one of the basis for learning about networks in any programming language. By learning to write simple client and server programs that use TCP/IP, readers can then realize network routing, framing, error detection and correction, and performance.

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. 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++.

Systematic Reuse with ACE and Frameworks
Java Network Programming

Practical Guide for Programmers

The Bulgarian C# Book

C++ Network Programming, Volume I

C# Network Programming

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 to developers who wish to 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 buffers 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.

The free book "Fundamentals of Computer Programming with C#" is a comprehensive computer programming tutorial that teaches programming, logical thinking, data structures and algorithms, problem solving and high quality code with lots of examples in C#. It starts with the first steps in programming and software development like variables, data types, conditional statements, loops and arrays and continues with other basic topics like methods, numeral systems, strings and string processing, exceptions, classes and objects. After the basics this fundamental programming book enters into more advanced programming topics like recursion, data structures (lists, trees, hash-tables and graphs), high-quality code, unit testing and refactoring, object-oriented principles (inheritance, abstraction, encapsulation and polymorphism) and their implementation the C# language. It also covers fundamental topics that each good developer should know like algorithm design, complexity of algorithms and problem solving. The book uses C# language and Visual Studio to illustrate the programming concepts and explains some C# / .NET specific technologies like lambda expressions, extension methods and LINQ. The book is written by a team of developers lead by Svetlin Nakov who

has 20+ years practical software development experience. It teaches the major programming concepts and way of thinking needed to become a good software engineer and the C# language in the meantime. It is a great start for anyone who wants to become a skillful software engineer. The books does not teach technologies like databases, mobile and web development, but shows the true way to master the basics of programming regardless of the languages, technologies and tools. It is good for beginners and intermediate developers who want to put a solid base for a successful career in the software engineering industry. The book is accompanied by free video lessons, presentation slides and mind maps, as well as hundreds of exercises and live examples. Download the free C# programming book, videos, presentations and other resources from <http://introprogramming.info>. Title: Fundamentals of Computer Programming with C# (The Bulgarian C# Programming Book) ISBN: 9789544007737 ISBN-13: 978-954-400-773-7 (9789544007737) ISBN-10: 954-400-773-3 (9544007733) Author: Svetlin Nakov & Co. Pages: 1132 Language: English Published: Sofia, 2013 Publisher: Faber Publishing, Bulgaria Web site: <http://www.introprogramming.info> License: CC-Attribution-Share-Alike Tags: free, programming, book, computer programming, programming fundamentals, ebook, book programming, C#, CSharp, C# book, tutorial, C# tutorial; programming concepts, programming fundamentals, compiler, Visual Studio, .NET, .NET Framework, data types, variables, expressions, statements, console, conditional statements, control-flow logic, loops, arrays, numeral systems, methods, strings, text processing, StringBuilder, exceptions, exception handling, stack trace, streams, files, text files, linear data structures, list, linked list, stack, queue, tree, balanced tree, graph, depth-first search, DFS, breadth-first search, BFS, dictionaries, hash tables, associative arrays, sets, algorithms, sorting algorithm, searching algorithms, recursion, combinatorial algorithms, algorithm complexity, OOP, object-oriented programming, classes, objects, constructors, fields, properties, static members, abstraction, interfaces, encapsulation, inheritance, virtual methods, polymorphism, cohesion, coupling, enumerations, generics, namespaces, UML, design patterns, extension methods, anonymous types, lambda expressions, LINQ, code quality, high-quality code, high-quality classes, high-quality methods, code formatting, self-documenting code, code refactoring, problem solving, problem solving methodology, 9789544007737, 9544007733

The ADAPTIVE Communication Environment (ACE) is an open-source software toolkit created to solve network programming challenges. Written in C++, with the help of 30 core developers and 1,700 contributors, this portable middleware has evolved to encapsulate and augment a wide range of native OS capabilities essential to support performance-driven software systems. The ACE Programmer's Guide is a practical, hands-on guide to ACE for C++ programmers building networked applications and next-generation middleware. The book first introduces ACE to beginners. It then explains how you can tap design patterns, frameworks, and ACE to produce effective, easily maintained software systems with less time and effort. The book features discussions of programming aids, interprocess communication (IPC) issues, process and thread management, shared memory, the ACE Service Configurator framework, timer management classes, the ACE Naming Service, and more.

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.

Building Applications for the AppStore

Multicast Sockets

iPhone SDK Application Development

TCP/IP Sockets in C

TCP/IP Illustrated, Volume 1

Hands-On Network Programming with C

*The book is logically divided into 5 main categories with each category representing a major skill set required by most security professionals: 1. Coding - The ability to program and script is quickly becoming a mainstream requirement for just about everyone in the security industry. This section covers the basics in coding complemented with a slue of programming tips and tricks in C/C++, Java, Perl and NASL. 2. Sockets - The technology that allows programs and scripts to communicate over a network is sockets. Even though the theory remains the same - communication over TCP and UDP, sockets are implemented differently in nearly ever language. 3. Shellcode - Shellcode, commonly defined as bytecode converted from Assembly, is utilized to execute commands on remote systems via direct memory access. 4. Porting - Due to the differences between operating platforms and language implementations on those platforms, it is a common practice to modify an original body of code to work on a different platforms. This technique is known as porting and is incredible useful in the real world environments since it allows you to not "recreate the wheel. 5. Coding Tools - The culmination of the previous four sections, coding tools brings all of the techniques that you have learned to the forefront. With the background technologies and techniques you will now be able to code quick utilities that will not only make you more productive, they will arm you with an extremely valuable skill that will remain with you as long as you make the proper time and effort dedications. *Contains never before seen chapters on writing and automating exploits on windows systems with all-new exploits. *Perform zero-day exploit forensics by reverse engineering malicious code. *Provides working code and scripts in all of the most common programming languages for readers to use TODAY to defend their networks.*

Multicast Sockets: Practical 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 team 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.

The official book on the Rust programming language, written by the Rust development team at the Mozilla Foundation, fully updated for Rust 2018. The Rust Programming Language is the official book on Rust: an open source systems programming language that helps you write faster, more reliable software. Rust offers control over low-level details (such as memory usage) in combination with high-level ergonomics, eliminating the hassle traditionally associated with low-level languages. The authors of The Rust Programming Language, members of the Rust Core Team, share their knowledge and experience to show you how to take full advantage of Rust's features—from installation to creating robust and scalable programs. You'll begin with basics like creating functions, choosing data types, and binding variables and then move on to more advanced concepts, such as:

- Ownership and borrowing, lifetimes, and traits
- Using Rust's memory safety guarantees to build fast, safe programs
- Testing, error handling, and effective refactoring
- Generics, smart pointers, multithreading, trait objects, and advanced pattern matching
- Using Cargo, Rust's built-in package manager, to build, test, and document your code and manage dependencies
- How best to use Rust's advanced compiler with compiler-led programming techniques

You'll find plenty of code examples throughout the book, as well as three chapters dedicated to building complete projects to test your learning: a number guessing game, a Rust implementation of a command line tool, and a multithreaded server. New to this edition: An extended section on Rust macros, an expanded chapter on modules, and appendixes on Rust development tools and editions.

A detailed introduction to the C programming language for experienced programmers. The world runs on code written in the C programming language, yet most schools begin the curriculum with Python or Java. Effective C bridges this gap and brings C into

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the modern era--covering the modern C17 Standard as well as potential C2x features. With the aid of this instant classic, you'll soon be writing professional, portable, and secure C programs to power robust systems and solve real-world problems. Robert C. Seacord introduces C and the C Standard Library while addressing best practices, common errors, and open debates in the C community. Developed together with other C Standards committee experts, Effective C will teach you how to debug, test, and analyze C programs. You'll benefit from Seacord's concise explanations of C language constructs and behaviors, and from his 40 years of coding experience. You'll learn:

- How to identify and handle undefined behavior in a C program*
- The range and representations of integers and floating-point values*
- How dynamic memory allocation works and how to use nonstandard functions*
- How to use character encodings and types*
- How to perform I/O with terminals and filesystems using C Standard streams and POSIX file descriptors*
- How to understand the C compiler's translation phases and the role of the preprocessor*
- How to test, debug, and analyze C programs*

Effective C will teach you how to write professional, secure, and portable C code that will stand the test of time and help strengthen the foundation of the computing world.

Mastering Complexity with ACE and Patterns, Portable Documents
Learn socket programming in C and write secure and optimized network code

The Protocols

Practical Design Patterns for Network and Systems Programming

The Definitive Guide to Linux Network Programming

C++ Network Programming, Volume 2

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.

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

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 Features Explore various network architectures that make distributed programming possible Learn how to make reliable software by writing secure interactions between clients and servers Use .NET Core for network device automation, DevOps, and software-defined networking Book 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 provide you with a holistic understanding of how network software fits into large 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 learn Understand the breadth of C#'s network programming utility classes Utilize network-layer architecture and organizational strategies Implement various communication and transport protocols within C# Discover hands-on examples of distributed application development Gain hands-on experience with asynchronous socket programming and streams Learn how C# and the .NET Core runtime interact with a hosting network Understand a full suite of network programming tools and features Who 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.

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 build. 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 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.

IPv6 Network Programming

Python Network Programming Cookbook

Using Internet Sockets

Add powerful neural network capabilities to your C# enterprise applications

Learning Network Programming with Java

Build robust network applications with C# and .NET Core

Hands-On Network Programming with C
and write secure and optimized network code
Packt Publishing Ltd

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`, `Inet4/6Address`, `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.

Create and unleash the power of neural networks by implementing C# and .Net code Key FeaturesGet a strong foundation of neural networks with access to various machine learning and deep learning librariesReal-world case studies illustrating various neural network techniques and architectures used by practitionersCutting-edge coverage of Deep Networks, optimization algorithms, convolutional networks, autoencoders and many moreBook Description Neural networks have made a surprise comeback in the last few years and have brought tremendous innovation in the world of artificial intelligence. The goal of this book is to provide C# programmers with practical guidance in solving complex computational challenges using neural networks and C# libraries such as CNTK, and TensorFlowSharp. This book will take you on a step-by-step practical journey, covering everything from the mathematical and theoretical aspects of neural networks, to building your own deep neural networks into your applications with the C# and .NET frameworks. This book begins by giving you a quick refresher of neural networks. You will learn how to build a neural network from scratch using packages such as Encog, Aforge, and Accord. You will learn about various concepts and techniques, such as deep networks, perceptrons, optimization algorithms, convolutional networks, and autoencoders. You will learn ways to add intelligent features

to your .NET apps, such as facial and motion detection, object detection and labeling, language understanding, knowledge, and intelligent search. Throughout this book, you will be working on interesting demonstrations that will make it easier to implement complex neural networks in your enterprise applications. What you will learn Understand perceptrons and how to implement them in C# Learn how to train and visualize a neural network using cognitive services Perform image recognition for detecting and labeling objects using C# and TensorFlow Sharp Detect specific image characteristics such as a face using Accord.Net Demonstrate particle swarm optimization using a simple XOR problem and Encog Train convolutional neural networks using ConvNetSharp Find optimal parameters for your neural network functions using numeric and heuristic optimization techniques. Who this book is for This book is for Machine Learning Engineers, Data Scientists, Deep Learning Aspirants and Data Analysts who are now looking to move into advanced machine learning and deep learning with C#. Prior knowledge of machine learning and working experience with C# programming is required to take most out of this book For example code from the text, Winsock adaptations of text code, sample programming exercises and more, click on the grey "COMPANION SITE" button to the right. Note: This title was formerly known as Pocket Guide to TCP/IP Socket Programming in C, ISBN 1-55860-686-6. TCP/IP Sockets in C: Practical Guide for Programmers is a quick and affordable way to gain the knowledge and skills you need to develop sophisticated and powerful networked-based programs using sockets. Written by two experienced networking instructors, this book provides a series of examples that demonstrate basic sockets techniques for clients and servers. Using plenty of real-world examples, this book is a complete beginner's guide to socket programming and a springboard to more advanced networking topics, including multimedia protocols. *Concise, no-nonsense explanations of issues often troublesome for beginners, including message construction and parsing. *Comprehensive example-based coverage of the most important TCP/IP techniques-including iterative and concurrent servers, timeouts, and asynchronous message processing. *Includes a detailed, easy-to-use reference to the system calls and auxiliary routines that comprise the sockets interface. *A companion Web site provides source code for all example programs in both C and WinSock versions, as well as guidance on running the code on various platforms.

Beej's Guide to Network Programming

Effective TCP/IP Programming

Fundamentals of Computer Programming with C#

TCP/IP Sockets in Java

Boost.Asio C++ Network Programming

Push the limits of what C - and you - can do, with this high-intensity guide to the most advanced capabilities of C Key Features Make the most of C's low-level control, flexibility, and high performance A comprehensive guide to C's most powerful and challenging features A thought-provoking guide packed with hands-on exercises and examples Book 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, Amini 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 learn Build advanced C knowledge on strong foundations, rooted in first principles Understand memory structures and compilation pipeline and how they work, and how to make most out of them Apply object-oriented design principles to your procedural C code Write low-level code that's close to the hardware and squeezes maximum performance out of a computer system Master concurrency, multithreading, multi-processing, and integration with other languages Unit Testing and debugging, build systems, and inter-process communication for C programming Who 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.

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

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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.

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

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C programming is assumed.

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.

Essential Skills for Using and Securing Networks

The ACE Programmer's Guide

Boost.Asio C++ Network Programming Cookbook

Network Programming with Go

Sockets, Shellcode, Porting, and Coding: Reverse Engineering Exploits and Tool Coding for Security Professionals

The purpose of this book is to provide tools to design and implement network-orientated applications in .NET. It is also a guide for software designers to choose the best and most efficient way to implement mission critical solutions. The book addresses real-world issues facing professional developers, such as using third-party components as opposed in-house development. It differentiates itself from existing .NET publications because it is aimed at experienced professionals and concentrates on practical, ready-to-use information. The book is written in two languages C# and VB.NET, and covers never-before published information on Telephony in .NET and packet-level networking. This is the second book in the Digital Press Software Development Series. Coverage of lower level protocols allows implementation of performance-centric applications Demonstrates the feasibility of developing telephony solutions in-house rather than outsourcing Written in VB.NET and C# to assist readers working in either language Coverage of Email, FTP and the WWW allows implementation of applications in all three areas

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.