

Tcp Ip Sockets In C

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[C++ Builder 5 Developer's Guide](#) - Jarrod Hollingworth 2000

Written by high-profiles representatives of the C++Builder-developer community, this book provides: insight into and how to use the new features; developer-to-developer coverage of critical areas of software development; a free set of components on the CD-ROM, and detailed coverage of C++Builder-specific development strategies, library usage and interface features.

Who Knew You Could Do That With Rpg Iv? a Sorcerer's Guide to System Access and More - IBM Redbooks 2000

Hands-On Network Programming with C - Lewis Van Winkle

2019-05-13

A comprehensive guide to programming with network sockets, implementing Internet protocols, designing IoT devices, and much more with C Key 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.

Network Programming for Microsoft Windows - Anthony Jones 2002

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

C++ Network Programming, Volume 2 - Douglas Schmidt 2002-10-29
Do you need to develop flexible software that can be customized quickly? Do you need to add the power and efficiency of frameworks to your software? The ADAPTIVE Communication Environment (ACE) is an open-source toolkit for building high-performance networked applications and next-generation middleware. ACE's power and flexibility arise from object-oriented frameworks, used to achieve the systematic reuse of networked application software. ACE frameworks handle common network programming tasks and can be customized using C++ language features to produce complete distributed applications. C++ Network Programming, Volume 2, focuses on ACE frameworks, providing thorough coverage of the concepts, patterns, and usage rules that form their structure. This book is a practical guide to designing object-oriented frameworks and shows developers how to apply frameworks to concurrent networked applications. C++ Networking, Volume 1, introduced ACE and the wrapper facades, which are basic network computing ingredients. Volume 2 explains how frameworks build on wrapper facades to provide higher-level communication services. Written by two experts in the ACE community, this book contains: An overview of ACE frameworks Design dimensions for networked services Descriptions of the key capabilities of the most important ACE frameworks Numerous C++ code examples that demonstrate how to use ACE frameworks C++ Network Programming, Volume 2, teaches how to use frameworks to write networked applications quickly, reducing development effort and overhead. It will be an invaluable asset to any C++ developer working on networked applications.

TCP/IP Sockets in Java - Kenneth L. Calvert 2011-08-29

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.

Windows Sockets Network Programming - Bob Quinn 2010-12-30

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

Beej's Guide to Network Programming - Brian "beej Jorgensen" Hall 2019-12-12

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

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

TCP/IP Sockets in C: Practical Guide for Programmers, Second Edition is a quick and affordable way to gain the knowledge and skills needed to develop sophisticated and powerful web-based applications. The book's focused, tutorial-based approach enables the reader to master the tasks and techniques essential to virtually all client-server projects using sockets in C. This edition has been expanded to include new

advancements such as support for IPv6 as well as detailed defensive programming strategies. If you program using Java, be sure to check out this book's companion, TCP/IP Sockets in Java: Practical Guide for Programmers, 2nd Edition. Includes completely new and expanded sections that address the IPv6 network environment, defensive programming, and the select() system call, thereby allowing the reader to program in accordance with the most current standards for internetworking. Streamlined and concise tutelage in conjunction with line-by-line code commentary allows readers to quickly program web-based applications without having to wade through unrelated and discursive networking tenets.

HTTP: The Definitive Guide - David Gourley 2002-09-27

Covers topics including HTTP methods and status codes, optimizing proxies, designing web crawlers, content negotiation, and load-balancing strategies.

Linux Socket Programming by Example - Warren Gay 2000

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

TCP/IP 网络编程 C (THE POCKET GUIDE TO TCP/IP SOCKETS VERSION C - MICHAEL J.DONAHOO 2001-10-15

Multicast Sockets - David Makofske 2002-11-21

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

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

Programming in TCP/IP can seem deceptively simple. Nonetheless, many network programmers recognize that their applications could be much more robust. Effective TCP/IP Programming is designed to boost programmers to a higher level of competence by focusing on the protocol suite's more subtle features and techniques. It gives you the know-how you need to produce highly effective TCP/IP programs. In forty-four concise, self-contained lessons, this book offers experience-based tips, practices, and rules of thumb for learning high-performance TCP/IP programming techniques. Moreover, it shows you how to avoid many of TCP/IP's most common trouble spots. Effective TCP/IP Programming offers valuable advice on such topics as: Exploring IP addressing, subnets, and CIDR Preferring the sockets interface over XTI/TLI Using two TCP connections Making your applications event-driven Using one large write instead of multiple small writes Avoiding data copying Understanding what TCP reliability really means Recognizing the effects of buffer sizes Using tcpdump, traceroute, netstat, and ping effectively Numerous examples demonstrate essential ideas and concepts. Skeleton code and a library of common functions allow you to write applications without having to worry about routine chores. Through individual tips and explanations, you will acquire an overall understanding of TCP/IP's inner workings and the practical knowledge needed to put it to work. Using Effective TCP/IP Programming, you'll speed through the learning process and quickly achieve the programming capabilities of a seasoned pro.

C# Network Programming - Richard Blum 2006-02-20

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.

ZeroMQ - Pieter Hintjens 2013-03-15

Offers instruction on how to use the flexible networking tool for exchanging messages among clusters, the cloud, and other multi-system environments.

Python Cookbook - Alex Martelli 2005-03-18

Portable, powerful, and a breeze to use, Python is the popular open source object-oriented programming language used for both standalone programs and scripting applications. It is now being used by an increasing number of major organizations, including NASA and Google. Updated for Python 2.4, The Python Cookbook, 2nd Edition offers a wealth of useful code for all Python programmers, not just advanced practitioners. Like its predecessor, the new edition provides solutions to problems that Python programmers face everyday. It now includes over

200 recipes that range from simple tasks, such as working with dictionaries and list comprehensions, to complex tasks, such as monitoring a network and building a templating system. This revised version also includes new chapters on topics such as time, money, and metaprogramming. Here's a list of additional topics covered:

- Manipulating text
- Searching and sorting
- Working with files and the filesystem
- Object-oriented programming
- Dealing with threads and processes
- System administration
- Interacting with databases
- Creating user interfaces
- Network and web programming
- Processing XML
- Distributed programming
- Debugging and testing

Another advantage of *The Python Cookbook, 2nd Edition* is its trio of authors--three well-known Python programming experts, who are highly visible on email lists and in newsgroups, and speak often at Python conferences. With scores of practical examples and pertinent background information, *The Python Cookbook, 2nd Edition* is the one source you need if you're looking to build efficient, flexible, scalable, and well-integrated systems.

[Programming Chrome Apps](#) - Marc Rochkind 2014-12-15
Put your web app design skills to work by learning how to create powerful and portable Chrome Apps. With this practical book, you'll learn how to build Google's unique apps to behave just like native apps so they can interact with hardware devices, access external files, and send notifications. Chrome Apps run on any platform that supports the Chrome browser--including OS X, Windows, Linux, as well as Android and iOS. If you know how to work with HTML, CSS, JavaScript, and the DOM, you're ready to get started.

UNIX Network Programming - W. Richard Stevens 1990
The Unix model; Interprocess communication; A network primer; Communication protocols; Berkeley sockets; System V transport layer interface; Library routines; Security; Time and date routines; Ping routines; Trivial file transfer protocol; Line printer spoolers; Remote command execution; Remote login; Remote tape drive access; Performance; Remote procedure calls.

TCP/IP Sockets in C# - David Makofske 2004-04-29
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.

Text Processing in Python - David Mertz 2003
bull; Demonstrates how Python is the perfect language for text-processing functions. bull; Provides practical pointers and tips that emphasize efficient, flexible, and maintainable approaches to text-processing challenges. bull; Helps programmers develop solutions for dealing with the increasing amounts of data with which we are all inundated.

The Pocket Guide to TCP/IP Sockets - Michael J. Donahoo 2001
The Pocket Guide to TCP/IP Sockets is a quick and affordable way to gain the knowledge and skills you need to develop sophisticated and powerful networked-based programs using sockets. Written by two experienced networking instructors, this book provides a series of examples that demonstrate basic sockets techniques for clients and servers. Using plenty of real-world examples, this book is a complete beginner's guide to socket programming and a springboard to more advanced networking topics, including multimedia protocols.

Linux Socket Programming - Sean Walton 2001
"Linux Socket Programming" provides thorough, authoritative coverage of the sockets API, the defacto standard for all network programming. It gives real-world examples that demonstrate effective techniques to make code more robust and versatile. This book contains the only complete reference for all calls and functions needed to program sockets.

Effective TCP/IP Programming - Jon C. Snader 2000
In 44 expert mini-lessons, *Effective TCP/IP Programming* demystifies TCP/IP development, eliminating the guesswork, helping programmers past the obstacles, and showing how to dramatically improve application performance and robustness. TCP/IP programming can seem seductively simple: the API is straightforward and even novices can flesh out a working application. But there are plenty of hidden obstacles -- and developers who don't understand them will encounter serious

performance problems. Effective TCP/IP Programming demystifies the critical details and hidden behaviors of TCP/IP, so programmers can build code that's more reliable, maintainable, and efficient. Following the widely-admired style of Scott Meyers' Effective C++, Jon C. Snader has organized this book into 44 short, self-contained sections, each addressing one key aspect of TCP/IP development, or one key trouble spot -- and each including detailed, fully commented code examples. The result: a book that's easy to read and absorb, and will serve as an outstanding day-to-day reference tool for every developer who wants to create TCP/IP-based network applications. A perfect complement to other books on TCP/IP, such as TCP/IP Illustrated, Volume 1 by W. Richard Stevens!

Hands-On Network Programming with C# and .NET Core - Sean Burns 2019-03-29

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 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 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.

Effective C - Robert C. Seacord 2020-08-11

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 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.

Learning Java - Patrick Niemeyer 2002

A tutorial introducing Java basics covers programming principles, integrating applets with Web applications, and using threads, arrays, and sockets.

An Introduction to TCP/IP - John Davidson 2012-12-06

This unique and valuable source of information describes the protocol suite according to the International Organization for Standards (ISO) seven-level (OSI) reference model. Written by Dr. John Davidson at Ungermann/Bass, the world's largest manufacturer of local area networks, this book will appeal to everybody interested or involved in local or wide-area computer networking projects.

Extreme C - Kamran Amini 2019-10-31

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, aviation, 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.

Mastering Python for Networking and Security - José Manuel Ortega 2018-09-28

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.

Real World Haskell - Bryan O'Sullivan 2008-11-15

This easy-to-use, fast-moving tutorial introduces you to functional programming with Haskell. You'll learn how to use Haskell in a variety of practical ways, from short scripts to large and demanding applications. *Real World Haskell* takes you through the basics of functional programming at a brisk pace, and then helps you increase your

understanding of Haskell in real-world issues like I/O, performance, dealing with data, concurrency, and more as you move through each chapter.

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

“For an engineer determined to refine and secure Internet operation or to explore alternative solutions to persistent problems, the insights provided by this book will be invaluable.” —Vint Cerf, Internet pioneer

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

Networked Graphics - Anthony Steed 2009-10-30

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.

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

As networks, devices, and systems continue to evolve, software engineers face the unique challenge of creating reliable distributed applications within frequently changing environments. *C++ Network Programming, Volume 1*, provides practical solutions for developing and optimizing complex distributed systems using the ADAPTIVE Communication Environment (ACE), a revolutionary open-source framework that runs on dozens of hardware platforms and operating systems. This book guides software professionals through the traps and pitfalls of developing efficient, portable, and flexible networked applications. It explores the inherent design complexities of concurrent networked applications and the tradeoffs that must be considered when working to master them. *C++ Network Programming* begins with an overview of the issues and tools involved in writing distributed concurrent applications. The book then provides the essential design dimensions, patterns, and principles needed to develop flexible and efficient concurrent networked

applications. The book's expert author team shows you how to enhance design skills while applying C++ and patterns effectively to develop object-oriented networked applications. Readers will find coverage of: C++ network programming, including an overview and strategies for addressing common development challenges The ACE Toolkit Connection protocols, message exchange, and message-passing versus shared memory Implementation methods for reusable networked application services Concurrency in object-oriented network programming Design principles and patterns for ACE wrapper facades With this book, C++ developers have at their disposal the most complete toolkit available for developing successful, multiplatform, concurrent networked applications with ease and efficiency.

TCP/IP Sockets in Java - Kenneth L. Calvert 2001-10-25

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 Java 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.

TCP/IP Architecture, Design, and Implementation in Linux - Sameer Seth 2009-01-23

This book provides thorough knowledge of Linux TCP/IP stack and kernel framework for its network stack, including complete knowledge of design and implementation. Starting with simple client-server socket programs and progressing to complex design and implementation of TCP/IP protocol in linux, this book provides different aspects of socket programming and major TCP/IP related algorithms. In addition, the text features netfilter hook framework, a complete explanation of routing subsystem, IP QOS implementation, and Network Soft IRQ. This book further contains elements on TCP state machine implementation, TCP timer implementation on Linux, TCP memory management on Linux, and debugging TCP/IP stack using lcrash

Computer Networks - Larry L. Peterson 2011-03-02

Computer Networks: A Systems Approach, Fifth Edition, explores the key principles of computer networking, with examples drawn from the real world of network and protocol design. Using the Internet as the primary example, this best-selling and classic textbook explains various protocols and networking technologies. The systems-oriented approach encourages students to think about how individual network components fit into a larger, complex system of interactions. This book has a completely updated content with expanded coverage of the topics of utmost importance to networking professionals and students, including P2P, wireless, network security, and network applications such as e-mail and the Web, IP telephony and video streaming, and peer-to-peer file sharing. There is now increased focus on application layer issues where innovative and exciting research and design is currently the center of

attention. Other topics include network design and architecture; the ways users can connect to a network; the concepts of switching, routing, and internetworking; end-to-end protocols; congestion control and resource allocation; and end-to-end data. Each chapter includes a problem statement, which introduces issues to be examined; shaded sidebars that elaborate on a topic or introduce a related advanced topic; What's Next? discussions that deal with emerging issues in research, the commercial world, or society; and exercises. This book is written for graduate or upper-division undergraduate classes in computer networking. It will also be useful for industry professionals retraining for network-related assignments, as well as for network practitioners seeking to understand the workings of network protocols and the big picture of networking. Completely updated content with expanded coverage of the topics of utmost importance to networking professionals and students, including P2P, wireless, security, and applications. Increased focus on application layer issues where innovative and exciting research and design is currently the center of attention. Free downloadable network simulation software and lab experiments manual available.

Multiplayer Game Programming - Josh Glazer 2015-11-20

The Practical Guide to Building Reliable Networked Multiplayer Games. Networked multiplayer games are a multibillion dollar business: some games now attract tens of millions of players. In this practical, code-rich guide, Joshua Glazer and Sanjay Madhav guide you through every aspect of engineering them. Drawing on their immense experience as both game developers and instructors, the authors lead you through building a robust multiplayer architecture, and creating every engine-level system. You'll learn through in-depth working code examples for two complete games: an action game and a real time strategy (RTS) game. First, Madhav and Glazer review the essentials of networking and network programming from the standpoint of game developers. Next, they walk through managing game data transmission, updating game objects across the network, and organizing the devices that join your game. You'll learn how to ensure reliable performance despite the Internet's

inherent inconsistencies, and how to design game code for maximum security and scalability. The authors conclude by addressing two increasingly crucial issues: incorporating gamer services and hosting your games in the cloud. This guide's content has been extensively tested through the authors' multiplayer game programming courses at USC. It is equally valuable both to students and to working game programmers moving into networked games. Coverage includes How games have evolved to meet the challenges of networked environments Using Internet communication protocols and standards in game development Working with Berkeley Socket, the most widely used networking construct in multiplayer gaming Formatting game data for efficient Internet transmission Synchronizing states so all players share the same world Organizing networking topologies for large-scale games Overcoming latency and jitter problems that cause delays or lost data Scaling games without compromising performance Combating security vulnerabilities and software cheats Leveraging the networking functionality of the popular Unreal 4 and Unity game engines Integrating gamer services such as matchmaking, achievements, and leaderboards Running game servers in the cloud About the Website C++ source code for all examples is available at github.com/MultiplayerBook. Instructors will also find a full set of PowerPoint slides and a sample syllabus.

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

This book contains everything you need to make your application program support IPv6. IPv6 socket APIs (RFC2553) are fully described with real-world examples. It covers security, a great concern these days. To secure the Internet infrastructure, every developer has to take a security stance - to audit every line of code, to use proper API and write correct and secure code as much as possible. To achieve this goal, the examples presented in this book are implemented with a security stance. Also, the book leads you to write secure programs. For instance, the book recommends against the use of some of the IPv6 standard APIs - unfortunately, there are some IPv6 APIs that are inherently insecure, so the book tries to avoid (and discourage) the use of such APIs. Another key issue is portability. The examples in the book should be applicable to

any of UNIX based operating systems, MacOS X, and Windows XP. * Covers the new protocol just adopted by the Dept of Defense for future systems * Deals with security concerns, including spam and email, by presenting the best programming standards * Fully describes IPv6 socket APIs (RFC2553) using real-world examples * Allows for portability to UNIX-based operating systems, MacOS X, and Windows XP

Practical C Programming - B. M. Harwani 2020-02-14

A comprehensive guide with practical instructions for learning data structures, low-level programming, high-performance computing, networking and IoT to help you understand the latest standards in C programming such as C11 and C18 Key Features Tackle various challenges in C programming by making the most of its latest features Understand the workings of arrays, strings, functions, pointers, advanced data structures, and algorithms Become well-versed with process synchronization during multitasking and server-client process communication Book Description Used in everything from microcontrollers to operating systems, C is a popular programming language among developers because of its flexibility and versatility. This book helps you get hands-on with various tasks, covering the fundamental as well as complex C programming concepts that are essential for making real-life applications. You'll start with recipes for arrays, strings, user-defined functions, and pre-processing directives. Once you're familiar with the basic features, you'll gradually move on to

learning pointers, file handling, concurrency, networking, and inter-process communication (IPC). The book then illustrates how to carry out searching and arrange data using different sorting techniques, before demonstrating the implementation of data structures such as stacks and queues. Later, you'll learn interesting programming features such as using graphics for drawing and animation, and the application of general-purpose utilities. Finally, the book will take you through advanced concepts such as low-level programming, embedded software, IoT, and security in coding, as well as techniques for improving code performance. By the end of this book, you'll have a clear understanding of C programming, and have the skills you need to develop robust apps. What you will learn Discover how to use arrays, functions, and strings to make large applications Perform preprocessing and conditional compilation for efficient programming Understand how to use pointers and memory optimally Use general-purpose utilities and improve code performance Implement multitasking using threads and process synchronization Use low-level programming and the inline assembly language Understand how to use graphics for animation Get to grips with applying security while developing C programs Who this book is for This intermediate-level book is for developers who want to become better C programmers by learning its modern features and programming practices. Familiarity with C programming is assumed to get the most out of this book.