

## Socket Programming In C C Ethos Home

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<i>Socket Programming In C C Ethos Home</i>	<i>2021-04-28</i>
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**TCP/IP Sockets in Java** Apress

A one-of-a-kind description about using the Linux operating system on a TCP/IP network Boasting high-performance, high availability, and open source code, Linux has emerged as an optimal choice for an operating system. Yet for Linux to be adopted by the mainstream of Unix-based corporate and ISP networks, it must be capable of supporting the TCP/IP Internet protocol, like any other network operating system. This book provides the rapidly growing audience of Linux site managers, as well as researchers and developers worldwide, with the information they need on how Linux TCP/IP keeps the network running. Internationally recognized expert on Internetworking, Jon Crowcroft walks readers through the Linux TCP/IP protocol stack, offering detailed explanations on how Linux implements its communications protocols. Vinton Cerf--co-inventor of TCP/IP--is the technical editor for this book.

**Bluetooth Essentials for Programmers** Pearson Education

Enhance your programming skills to build exciting robotic projects Key FeaturesBuild an intelligent robot that can detect and avoid obstacles and respond to voice commandsDetect and track objects and faces using OpenCVControl your robot with a GUI button designed using Qt5Book Description C++ is one of the most popular legacy programming languages for robotics, and a combination of C++ and robotics hardware is used in many leading industries. This book will bridge the gap between Raspberry Pi and C/C++ programming and enable you to develop applications for Raspberry Pi. To follow along with the projects covered in the book, you can implement C programs in Raspberry Pi with the wiringPi library. With this book, you'll develop a fully functional car robot and write programs to move it in different directions. You'll then create an obstacle - avoiding robot using an ultrasonic sensor. Furthermore, you'll find out how to control the robot wirelessly using your PC/Mac. This book will also help you work with object detection and tracking using OpenCV, and guide you through exploring face detection techniques. Finally, you will create an Android app and control the robot wirelessly with an Android smartphone. By the end of this book, you will have gained experience in developing a robot using Raspberry Pi and C/C++ programming. What you will learnInstall software in Raspberry Pi compatible with C++ programmingProgram the Raspberry Pi in C++ to run a motorControl RPi-powered robot wirelessly with your laptop or PCProgram an RPi camera using OpenCV Control a Raspberry Pi robot with voice commandsImplement face and object detection with Raspberry PiWho this book is for This book is for developers, programmers, and robotics enthusiasts interested in leveraging C++ to build exciting robotics applications. Prior knowledge of C++ is necessary to understand the projects covered in this book.

**Effective TCP/IP Programming** Morgan Kaufmann

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.

*Extreme C* Packt Publishing Ltd

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.

*IPv6 Network Programming* John Wiley & Sons

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

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

**Effective C** Prentice Hall Professional

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. *Practical System Programming with C* Elsevier

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.

**UNIX Network Programming** Packt Publishing Ltd

Complete information for developers designing network programs using the Windows Sockets standard. This book's easy-to-understand explanations and sample programs simplify working with the Windows Sockets API. Expert Patrice Bonner presents methods and tools for designing robust network applications, including sample stream and datagram client and server applications.

**C and Python Applications** Addison-Wesley Professional

This is a clear introduction to the basic concepts of multi-threadingcomplemented by a detailed description of the multi-threading facilities available under the UNIX and Windows operating systems. The implementation mechanisms are hidden within C++ classes, which then provide standardized

interfaces to the functionality. With traditional single-threaded programming, objects serve as passive repositories of functionality that are invoked by external code. Multi-threading allows objects to become active entities that independently perform their own processing.

#### **Secure Coding in C and C++** Packt Publishing Ltd

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.

#### *Sockets, Shellcode, Porting, and Coding: Reverse Engineering Exploits and Tool Coding for Security Professionals* Packt Publishing Ltd

This guide for beginning to intermediate programmers offers step-by-step instructions as well as advice on protecting servers from attack, writing programs to determine socket buffer sizes, setting the TCP/IP keep-alive feature, understanding the differences between connection- and connectionless-oriented protocols, and selecting the most effective client and server interface.

#### TCP/IP Sockets in C# Packt Publishing Ltd

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

#### **TCP/IP and Linux Protocol Implementation** Elsevier

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.

#### *Multicast Sockets* Apress

Solve problems by embedding Python code in a C programs, SQL methods, Python sockets. This book uses rudimentary mathematics and basic programming to create practical Python applications for embedding. You'll start with an introduction to C and Python, assuming a fundamental understanding of what programming is. You will also review the basics of the database management language, SQL. You will learn how to use SQL from a C program and from a Python program. C and Python have different programming strengths, and you will learn how to write a Python program embedded within a C program to profit from the strength of each, in one program. Finally, you will explore how socket programs enable two computers to communicate with each other. Here the book covers basic server-client, basic threaded, and basic chat programs. *div* What You Will Learn Review basic Python and C coding Understand the methods of embedding Python code within a C program Create typical programs in Python and C using SDK Work with socket applications in Python Who This Book Is For Programmers and computational modelers with at least some prior experience with programming in C and Python as well as programming in general.

#### **Multi-Threaded Programming in C++** Que Publishing

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

#### Foundations of Python Network Programming Morgan Kaufmann

Master Python scripting to build a network and perform security operations Key Features Learn to handle cyber attacks with modern Python scripting Discover various Python libraries for building and securing your network Understand Python packages and libraries to secure your network infrastructure Book Description It's becoming more and more apparent that security is a critical aspect of IT infrastructure. A data breach is a major security incident, usually carried out by just hacking a simple network line. Increasing your network's security helps step up your defenses against cyber attacks. Meanwhile, Python is being used for increasingly advanced tasks, with the latest update introducing many new packages. This book focuses on leveraging these updated packages to build a secure network with the help of Python scripting. This book covers topics from building a network to the different procedures you need to follow to secure it. You'll first be introduced to different packages and libraries, before moving on to different ways to build a network with the help of Python scripting. Later, you will learn how to check a network's vulnerability using Python security scripting, and understand how to check vulnerabilities in your network. As you progress through the chapters, you will also learn how to achieve endpoint protection by leveraging Python packages along with writing forensic scripts. By the end of this book, you will be able to get the most out of the Python language to build secure and robust networks that are resilient to attacks. What you will learn Develop Python scripts for automating security and pentesting tasks Discover the Python standard library's main modules used for performing security-related tasks Automate analytical tasks and the extraction of information from servers Explore processes for detecting and exploiting vulnerabilities in servers Use network software for Python programming Perform server scripting and port scanning with Python Identify vulnerabilities in web applications with Python Use Python to extract metadata and forensics Who this book is for This book is ideal for network engineers, system administrators, or any security professional looking at tackling networking and security challenges. Programmers with some prior experience in Python will get the most out of this book. Some basic understanding of general programming structures and Python is required.

#### **C++ Network Programming, Volume I** Academic Press

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.

#### **C++ Network Programming** Sams Publishing

A comprehensive guide to programming with network sockets, implementing internet protocols, designing IoT devices, and much more with C Key Features Apply your C and 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 Windows, Linux, and macOS Book Description Network programming enables processes to communicate with each other over a computer network, but it is a complex task that requires programming with multiple libraries and protocols. With its support for third-party libraries and structured documentation, C is an ideal language to write network programs. Complete with step-by-step explanations of essential concepts and practical examples, this C network programming book begins with the fundamentals of Internet Protocol, TCP, and UDP. You'll explore client-server and peer-to-peer models for information sharing and connectivity with remote computers. The book will also cover HTTP and HTTPS for communicating between your browser and website, and delve into hostname resolution with DNS, which is crucial to the functioning of the modern web. As you advance, you'll gain insights into asynchronous socket programming and streams, and explore debugging and error handling. Finally, you'll study network monitoring and implement 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. You'll work with 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 Explore Simple Mail Transfer Protocol (SMTP) for electronic mail transmission 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 get started with network programming, this book is for you. Basic knowledge of C programming is assumed.

#### **Hands-On Robotics Programming with C++** FT Press

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