

[eBooks] A Comprehensive Guide To Controller Area Network

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A Comprehensive Guide to Controller Area Network-Wilfried Voss 2005-01-01 A Comprehensive Guide to Controller Area Network by Wilfred Voss represents the most thoroughly researched and most complete work on CAN available in the marketplace. It includes:A Brief History of CAN, Main Characteristics, Message Frame Architecture, Message Broadcasting, Bus Arbitration, Error Detection & Fault Confinement, CAN Physical Layer, and more? A Comprehensive Guide to J1939-Wilfried Voss 2008 SAE J1939 has become the accepted industry standard and the vehicle network technology of choice for off-highway machines. This resource provides profound information on the J1939 message format and network management. Understanding and Using the Controller Area Network Communication Protocol-Marco Di Natale 2013-01-19 This book to offers a hands-on guide to designing, analyzing and debugging a communication infrastructure based on the Controller Area Network (CAN) bus. Although the CAN bus standard is well established and currently used in most automotive systems, as well as avionics, medical systems and other devices, its features are not fully understood by most developers, who tend to misuse the network. This results in lost opportunities for better efficiency and performance. These authors offer a comprehensive range of architectural solutions and domains of analysis. It also provides formal models and analytical results, with thorough discussion of their applicability, so that it serves as an invaluable reference for researchers and students, as well as practicing engineers. A Comprehensive Guide to Servo Motor Sizing-Wilfried Voss 2007-08-01 The Importance of servo motor sizing should not be underestimated. Proper motor sizing will not only result in significant cost savings by saving energy, reducing purchasing and operating costs, reducing downtime, etc.; it also helps the engineer to design better motion control systems. However, the knowledge of mechanical systems and their influence on motor speed, inertia and torque requirements seems to decline in a world where modern technology aspects, such as tuning and programming, seem to be the main focus. The motor sizing process involves a number of mathematical equations, which are most certainly documented, but not necessarily with the motor sizing process in mind. This book focuses primarily on servo motor sizing and it documents in detail the inertia and torque calculations of standard mechanical components and the motor selection process. Controller Area Network Prototyping With Arduino-Wilfried Voss 2015-02-10 While the Arduino is not widely considered an industrial-strength solution, it provides, due to its low price and ease of programming, the perfect prototyping platform for all kinds of Controller Area Network (CAN) applications. This book, written by a leading expert on CAN technologies, guides the reader through the process of acquiring all necessary hardware and software components, the implementation of the CAN driver, and the implementation of programs (Arduino Sketches) to read, send, process, and display data from and to a CAN network. The collection of programming examples cumulates into a full-fledged USB-to-CAN Gateway communicating with a Windows/Linux PC. This book will enable you to achieve CAN functionality literally within only a few hours. Embedded Networking with CAN and CANopen-Olaf Pfeiffer 2008-01-01 CAN (Controller Area Network) is a serial communication protocol that was originally developed for the automobile industry. CAN is far superior to conventional serial technologies such as RS232 in regards to functionality and reliability and yet CAN implementations are more cost effective. CANopen, a higher layer protocol based on CAN, provides the means to apply the ingenious CAN features to a variety of industrial-embedded applications. Many users, for example in the field of medical engineering, opted for CANopen because they have to meet particularly stringent safety requirements. Similar requirements had to be considered by manufacturers of other equipment with very high safety or reliability requirements (e.g. robots, lifts and transportation systems). Providing a detailed look at both CAN and CANopen, this book examines those technologies in the context of embedded networks. There is an overview of general embedded networking and an introduction to the primary functionality provided by CANopen. Everything one needs to know to configure and operate a CANopen network using off-the-shelf components is described, along with details for those designers who want to build their own CANopen nodes. The wide variety of applications for CAN and CANopen is discussed, and instructions in developing embedded networks based on the protocol are included. In addition, references and examples using MicroCANopen, PCANopen Magic, and Vector's high-end development tools are provided. Controller Area Network-Konrad Etschberger 2001 CAN System Engineering-Wolfgang Lawrenz 2013-12-05 This book addresses the various challenges and open questions relating to CAN communication networks. Opening with a short introduction into the fundamentals of CAN, the book then examines the problems and solutions for the physical layout of networks, including EMC issues and topology layout. Additionally, a discussion of quality issues with a particular focus on test techniques is presented. Each chapter features a collection of illuminating insights and detailed technical information supplied by a selection of internationally-regarded experts from industry and academia. Features: presents thorough coverage of architectures, implementations and application of CAN transceiver, data link layer and so-called higher layer software; explains CAN EMC characteristics and countermeasures, as well as how to design CAN networks; demonstrates how to practically apply and test CAN systems; includes examples of real networks from diverse applications in automotive engineering, avionics, and home heating technology. Controller Area Network Projects-Dogan Ibrahim 2011 The Controller Area Network (CAN) was originally developed to be used as a vehicle data bus system in passenger cars. Today, CAN controllers are available from over 20 manufacturers, and CAN is finding applications in other fields, such as medical, aerospace, process control, automation, and so on. This book is written for students, for practising engineers, for hobbyists, and for everyone else who may be interested to learn more about the CAN bus and its applications. The aim of this book is to teach you the basic principles of CAN networks and in addition the development of microcontroller based projects using the CAN bus. In summary, this book enables the reader to: Learn the theory of the CAN bus used in automotive industry; Learn the principles, operation, and programming of microcontrollers; Design complete microcontroller based projects using the C language; Develop complete real CAN bus projects using microcontrollers; Learn the principles of OBD systems used to debug vehicle electronics. You will learn how to design microcontroller based CAN bus nodes, build a CAN bus, develop high-level programs, and then exchange data in real-time over the bus. You will also learn how to build microcontroller hardware and interface it to LEDs, LCDs, and A/D converters. The book assumes that the reader has some knowledge on basic electronics. Knowledge of the C programming language will be useful in later chapters of the book, and familiarity with at least one member of the PIC series of microcontrollers will be an advantage, especially if the reader intends to develop microcontroller based projects using the CAN bus. The CD contains a special demo version of the mikroC compiler which supports the key microcontrollers including: PIC, dsPIC, PIC24, PIC32 and AVR. This special version additionally features an advanced CAN library of intuitive and simple-to-use functions to encourage programming with ease and comfortable development of CAN networks. Motors for Makers-Matthew Scarpino 2015-11-26 The First Maker-Friendly Guide to Electric Motors! Makers can do amazing things with motors. Yes, they're more complicated than some other circuit elements, but with this book, you can completely master them. Once you do, incredible new projects become possible. Unlike other books, Motors for Makers is 100% focused on what you can do. Not theory. Making. First. Matthew Scarpino explains how electric motors work and what you need to know about each major type: stepper, servo, induction, and linear motors. Next, he presents detailed instructions and working code for interfacing with and controlling servomotors with Arduino Mega, Raspberry Pi, and BeagleBone Black. All source code and design files are available for you to download from motorsformakers.com. From start to finish, you'll learn through practical examples, crystal-clear explanations, and photos. If you've ever dreamed of what you could do with electric motors, stop dreaming...and start making! Understand why electric motors are so versatile and how they work Choose the right motor for any project Build the circuits needed to control each type of motor Program motor control with Arduino Mega, Raspberry Pi, or BeagleBone Black Use gearmotors to get the right amount of torque Use linear motors to improve speed and precision Design a fully functional electronic speed control (ESC) circuit Design your own quadcopter Discover how electric motors work in modern electric vehicles--with a fascinating inside look at Tesla's patents for motor design and control! iPhone Programming-Aaron Hillegass 2010-04-13 Based on Big Nerd Ranch's popular iPhone Bootcamp class, iPhone Programming: The Big Nerd Ranch Guide leads you through the essential tools and techniques for developing applications for the iPhone, iPad, and iPod Touch. In each chapter, you will learn programming concepts and apply them immediately as you build an application or enhance one from a previous chapter. These applications have been carefully designed and tested to teach the associated concepts and to provide practice working with the standard development tools Xcode, Interface Builder, and Instruments. The guide's learn-while-doing approach delivers the practical knowledge and experience you need to design and build real-world applications. Here are some of the topics covered: Dynamic interfaces with animation Using the camera and photo library User location and mapping services Accessing accelerometer data Handling multi-touch gestures Navigation and tabbed applications Tables and creating custom rows Multiple ways of storing and loading data: archiving, Core Data, SQLite Communicating with web services Allocation/Internationalization "After many 'false starts' with other iPhone development books, these clear and concise tutorials made the concepts gel for me. This book is a definite must have for any budding iPhone developer." -Peter Watling, New Zealand, Developer of BubbleWrap Counting Thyme-Melanie Conklin 2016-04-12 Newbery-winning Rules meets Counting by 7s in this affecting story of a girl's devotion to her brother and what it means to be home When eleven-year-old Thyme Owens' little brother, Val, is accepted into a new cancer drug trial, it's just the second chance that he needs. But it also means the Owens family has to move to New York, thousands of miles away from Thyme's best friend and everything she knows and loves. The island of Manhattan doesn't exactly inspire new beginnings, but Thyme tries to embrace the change for what it is: temporary. After Val's treatment shows real promise and Mr. Owens counts a full-time position in the city, Thyme has to face the frightening possibility that the move to New York is permanent. Thyme loves her brother, and knows the trial could save his life—she'd give anything for him to be well—but she still wants to go home, although the guilt of not wanting to stay is agonizing. She finds herself even more mixed up when her heart feels the tug of new friends, a first crush, and even a crotchety neighbor and his sweet whistling bird. All Thyme can do is count the minutes, the hours, and days, and hope time can bring both a miracle for Val and a way back home. With equal parts heart and humor, Melanie Conklin's debut is a courageous and charming story of love and family—and what it means to be counted. Mastering pSense-David Zientara 2016-08-29 Master the art of managing, securing, and monitoring your network using the powerful pSense 2.3 About This Book You can always do more to secure your software - so extend and customize your pSense firewall Build a high availability security system that's fault tolerant - and capable of blocking any threats Put the principles of better security into practice - unlock a more stable and reliable firewall Who This Book Is For SysAdmins and security pros - get more from the world's leading firewall with this book. You can always do more to secure your software, so start here. What You Will Learn Configure pSense services such as DHCP, Dynamic DNS, captive portal, DNS, NTP and SNMP Set up a managed switch to work with VLANs Use pSense to allow, block and deny traffic Make use of the traffic shaper to lower and raise the priority of certain types of traffic Set up and connect to a VPN tunnel with pSense Incorporate redundancy and high availability by utilizing load balancing and the Common Address Redundancy Protocol (CARP) Explore diagnostic tools in pSense to solve network problems In Detail pSense has the same reliability and stability as even the most popular commercial firewall offerings on the market - but, like the very best open-source software, it doesn't limit you. You're in control - you can exploit and customize pSense around your security needs. If you're familiar with pSense you probably knew that already. This book builds on any knowledge you may already have, and provides you with a clear route to expand your skills and pSense's capabilities. You'll learn how to customize and configure pSense to construct a firewall that can protect you from any potential security threats. Find out how to set up a VPN, and build a high-availability system that provides redundancy and fault tolerance - essential when security and software performance are so interdependent. With further guidance on how to use a diverse range of third-party packages - all of which will help you unlock more from pSense, this book covers everything you need - and more - to get a high-quality, reliable firewall up and running for a fraction of the cost. Style and approach Practical and actionable, tackle some advanced functionalities of pSense with minimum fuss. We know you don't just want an instruction manual - you want to put the principles of better security into practice. That's exactly why we produced this book. The Ruins of Gorlan-John Flanagan 2006 When fifteen-year-old Will is rejected by battleschool, he becomes the reluctant apprentice to the mysterious Ranger Halt, and winds up protecting the kingdom from danger. Story-Based Inquiry: A Manual for Investigative Journalists-Mark Lee Hunter 2011 Data Mining and Knowledge Discovery Handbook-Oded Maimon 2010-09-10 This book organizes key concepts, theories, standards, methodologies, trends, challenges and applications of data mining and knowledge discovery in databases. It first surveys, then provides comprehensive yet concise algorithmic descriptions of methods, including classic methods plus the extensions and novel methods developed recently. It also gives in-depth descriptions of data mining applications in various interdisciplinary industries. Mushroom Cultivation-Tavis Lynch 2018-05-08 Mushrooms are popping up everywhere! On restaurant menus, in grocery aisles, at local farmer's markets, and not just the ubiquitous white buttons we've seen for years. What once were exotic are now almost commonplace -- shitake, chanterelle, cremini, enoki, the list grows longer every year. Understanding how mushrooms grow is crucial to successfully cultivating them, and Mushroom Cultivation offers comprehensive instruction both on how mushrooms grow and how you can cultivate them yourself to enrich your soil, speed up your composting, and even to suppress weeds. Some cultivate mushrooms for medicinal use or make them into teas and tinctures. After reading Mushroom Cultivation, you'll discover that growing a mushroom is really no more difficult than growing a tomato. You just need a slightly different set of skills. Controller Area Network Prototyping With Arduino-Wilfried Voss 2015-02-10 While the Arduino is not widely considered an industrial-strength solution, it provides, due to its low price and ease of programming, the perfect prototyping platform for all kinds of Controller Area Network (CAN) applications. This book, written by a leading expert on CAN technologies, guides the reader through the process of acquiring all necessary hardware and software components, the implementation of the CAN driver, and the implementation of programs (Arduino Sketches) to read, send, process, and display data from and to a CAN network. The collection of programming examples cumulates into a full-fledged USB-to-CAN Gateway communicating with a Windows/Linux PC. This book will enable you to achieve CAN functionality literally within only a few hours. Windows Server Hacks-Mitch Tulloch 2004-03-24 One of the secrets to the ever-increasing popularity of Windows Server can be found in the simplicity its administration. The easy-to-use GUI, consistent set of tools, and wizards that walk you through complex tasks allow you to install, configure and maintain Windows servers without any knowledge of programming or scripting languages or learning complicated command-line syntax. It's possible, in fact, to accomplish about 90% of all Windows administration without ever opening a command prompt or running a script! But what about the other ten percent of the time? While it's true that most common, day-to-day tasks of Windows administration can be performed from the GUI, it's not always the best way, especially with complex or repetitive tasks Scripts and command-line tools often provide a faster, more flexible approach. Windows Server Hacks reveals techniques that go well beyond basic management tasks found in most handbooks to help busy system administrators master the more powerful features of Windows Server. Windows Server Hacks focuses on scripts and other tools that will make your life as an administrator much easier. These tools, or hacks--quick and dirty solutions to problems, or clever ways of doing things--were created by other professionals who've also had to struggle to find solutions to administering Windows environments. You'll save valuable time using their scripts, tools, tips, and advice. Plus, you can easily learn to customize the scripts to create even more powerful tools for your own, specific needs. The book includes secrets of the masters in such areas as Active Directory, User Management, Group Policy, DNS and DHCP, File and Print, IIS, performance and security. The hundred, industrial strength hacks in the book range from those that deal with general administration to more esoteric hacks in the areas of network deployment, patch management, and backup and recovery. No matter which Windows server you use--NT, IIS, 2000, or 2003--this book will put the knowledge and expertise of veteran system administrators and hackers to work for you. Windows Server Hacks will make your life easier while expanding your understanding of the capabilities of Windows Server. Windows Server 2003 Security Cookbook-Mike Danseglio 2005 In the last few years, security has become a hot-button issue for IT organizations of all sizes. Accordingly, many of the security features that were either optional or suspect in Windows 2000 have become solid, effective fixtures in Windows Server 2003-making it the most secure operating system Microsoft has ever produced. That is, if you know how to configure it properly. The Windows Server 2003 Security Cookbook wants to make sure that you do know how. Picking up right where its predecessor, the Windows Server Cookbook, left off, this desktop companion is focused solely on Windows Server security. It teaches you how to perform important security tasks in the Windows Server 2003 OS using specific and adaptable recipes. Each recipe features a brief description of the problem, a step-by-step solution, and then a discussion of the technology at work. Whenever possible, the authors even tell you where to look for further information on a recipe. The book is written in a highly modular format, with each chapter devoted to one or more technologies that Windows Server 2003 provides. This approach allows you to look up a task or scenario that you want to accomplish, find that page, and read that particular recipe only. Topics include: System preparation and administration Protecting the computer at the TCP/IP level Applying security options to Active Directory Improving security on domain controllers Securing DHCP controllers Encrypting and signing network traffic using IPsec Patch management If you're an intermediate or advanced system administrator who wants to feel secure when deploying Windows Server 2003 and its related services, then you don't want to be without the Windows Server 2003 Security Cookbook. Networking Fundamentals-Gordon Davies 2019-12-17 Become well-versed with basic networking concepts such as routing, switching, and subnetting, and prepare for the Microsoft 98-366 exam Key Features Build a strong foundation in networking concepts Explore both the hardware and software aspects of networking Prepare by taking mock tests with up-to-date exam questions Book Description A network is a collection of computers, servers, mobile devices, or other computing devices connected for sharing data. This book will help you become well versed in basic networking concepts and prepare to pass Microsoft's MTA Networking Fundamentals Exam 98-366. Following Microsoft's official syllabus, the book starts by covering network infrastructures to help you differentiate intranets, internets, and extranets, and learn about network topologies. You'll then get up to date with common network hardware devices such as routers and switches and the media types used to connect them together. As you advance, the book will take you through different protocols and services and the requirements to follow a standardized approach to networking. You'll get to grips with the OSI and TCP/IP models as well as IPv4 and IPv6. The book also shows you how to recall IP addresses through name resolution. Finally, you'll be able to practice everything you've learned and take the exam confidently with the help of mock tests. By the end of this networking book, you'll have developed a strong foundation in the essential networking concepts needed to pass Exam 98-366. What you will learn Things you will learn: Become well versed in networking topologies and concepts Understand network infrastructures such as intranets, extranets, and more Explore network switches, routers, and other network hardware devices Get to grips with different network protocols and models such as OSI and TCP/IP work with a variety of network services such as DHCP, NAT, firewalls, and remote access Apply networking concepts in different real-world scenarios Who this book is for If you're new to the IT industry or simply want to gain a thorough understanding of networking, this book is for you. A basic understanding of the Windows operating system and your network environment will be helpful. The Car Hacker's Handbook-Craig Smith 2016-03-01 Modern cars are more computerized than ever. Infotainment and navigation systems, Wi-Fi, automatic software updates, and other innovations aim to make driving more convenient. But vehicle technologies haven't kept pace with today's more hostile security environment, leaving millions vulnerable to attack. The Car Hacker's Handbook will give you a deeper understanding of the computer systems and embedded software in modern vehicles. It begins by examining vulnerabilities and providing detailed explanations of communications over the CAN bus and between devices and systems. Then, once you have an understanding of a vehicle's communication network, you'll learn how to intercept data and perform specific hacks to track vehicles, unlock doors, glitch engines, flood communication, and more. With a focus on low-cost, open source hacking tools such as Metasploit, Wireshark, Kayak, can-util, and ChipWhisperer, The Car Hacker's Handbook will show you how to: -Build an accurate threat model for your vehicle -Reverse engineer the CAN bus to fake engine signals -Exploit vulnerabilities in diagnostic and data-logging systems -Hack the ECU and other firmware and embedded systems -Feed exploits through infotainment and vehicle-to-vehicle communication systems -Override factory settings with performance-tuning techniques -Build physical and virtual test benches to try out exploits safely If you're curious about automotive security and have the urge to hack a two-ton computer, make The Car Hacker's Handbook your first stop. Using Samba-Gerald Carter 2007-01-23 This book is the comprehensive guide to Samba administration, officially adopted by the Samba Team. Wondering how to integrate Samba's authentication with that of a Windows domain? How to get Samba to serve Microsoft Dfs shares? How to share files on Mac OS X? These and a dozen other issues of interest to system administrators are covered. A whole chapter is dedicated to troubleshooting! The range of this book knows few bounds. Using Samba takes you from basic installation and configuration -- on both the client and server side, for a wide range of systems -- to subtle details of security, cross-platform compatibility, and resource discovery that make the difference between whether users see the folder they expect or a cryptic error message. The current edition covers such advanced 3.x features as: Integration with Active Directory and OpenLDAP Migrating from Windows NT 4.0 domains to Samba Delegating administrative tasks to non-root users Central printer management Advanced file serving features, such as making use of Virtual File Systems (VFS) plugins. Samba is a cross-platform triumph: robust, flexible and fast, it turns a Unix or Linux system into a file and print server for Microsoft Windows network clients. This book will help you make your file and print sharing as powerful and efficient as possible. The authors delve into the internals of the Windows activities and protocols to an unprecedented degree, explaining the strengths and weaknesses of each feature in Windows domains and in Samba itself. Whether you're playing on your personal computer or an enterprise network, on one note or a full three-octave range, Using Samba will give you an efficient and secure server. 802.11ac: A Survival Guide-Matthew S. Gast 2013-07-23 The next frontier for wireless LANs is 802.11ac, a standard that increases throughput beyond one gigabit per second. This concise guide provides in-depth information to help you plan for 802.11ac, with technical details on design, network operations, deployment, and monitoring. Author Matthew Gast--an industry expert who led the development of 802.11-2012 and security task groups at the Wi-Fi Alliance--explains how 802.11ac will not only increase the speed of your network, but its capacity as well. Whether you need to serve more clients with your current level of throughput, or serve your existing client load with higher throughput, 802.11ac is the solution. This book gets you started. Understand how the 802.11ac protocol works to improve the speed and capacity of a wireless LAN Explore how beamforming increases speed capacity by improving link margin, and lays the foundation for multi-user MIMO Learn how multi-user MIMO increases capacity by enabling an AP to send data to multiple clients simultaneously Plan when and how to upgrade your network to 802.11ac by evaluating client devices, applications, and network connections Cisco Networks-Chris Carthern 2015-11-27 This book is a concise one-stop desk reference and synopsis of basic knowledge and skills for Cisco certification prep. For beginning and experienced network engineers tasked with building LAN, WAN, and data center connections, this book lays out clear directions for installing, configuring, and troubleshooting networks with Cisco devices. The full range of certification topics is covered, including all aspects of IOS, NX-OS, and ASA software. The emphasis throughout is on solving the real-world challenges engineers face in configuring network devices, rather than on exhaustive descriptions of hardware features. This practical desk companion doubles as a comprehensive overview of the basic knowledge and skills needed by CCENT, CCNA, and CCNP exam takers. It distills a comprehensive library of cheat sheets, lab configurations, and advanced commands that the authors assembled as senior network engineers for the benefit of junior engineers they train, mentor on the job, and prepare for Cisco certification exams. Prior familiarity with Cisco routing and switching is desirable but not necessary, as Chris Carthern, Dr. Will Wilson, Noel Rivera, and Richard Bedwell start their book with a review of the basics of configuring routers and switches. All the more advanced chapters have labs and exercises to reinforce the concepts learned. This book differentiates itself from other Cisco books on the market by approaching network security from a hacker's perspective. Not only does it provide network security recommendations but it teaches you how to use black-hat tools such as oclHashcat, Loki, Burp Suite, Scapy, Metasploit, and Kali to actually test the security concepts learned. Readers of Cisco Networks will learn How to configure Cisco switches, routers, and data center devices in typical corporate network architectures The skills and knowledge needed to pass Cisco CCENT, CCNA, and CCNP certification exams How to set up and configure at-home labs using virtual machines and lab exercises in the book to practice advanced Cisco commands How to implement network configurations How to implement secure network configurations and configure the Cisco ASA firewall How to use black-hat tools and network penetration techniques to test the security of your network Automotive Computer Network Repair-Mandy Concepcion 2011-10-06 Automotive Computer Network Repair (Diagnostic Strategies of Modern Automotive Systems) By Mandy Concepcion In this book we will cover the intricacies of automotive inter-module communication systems or networks. The scope of this section will also go beyond the normal needs of an automotive technician. Hence, this will probably be the most difficult part of this series to comprehend. Be patient and open minded. Always give yourself time to absorb the knowledge and do not be discouraged. Special emphasis will be placed on the CAN system (Controller Area Network), since it is now the standard. CAN is one of the 9 OBD-2 protocols. A protocol is an agreement on communications interchange. It is in essence a computer communication language and specifies signaling, wiring, size of cables used, who controls the network and voltage levels. Various protocols were used in the past, some proprietary and some generic such as ISO 9141 and SAE 1850 VPW, but the standard is now the CAN protocol. Virtually all vehicle networks now talk to each other though the CAN protocol. It is now common place to see the seat belt, SRS-Airbag, transmission, ABS-Brakes, engine and radio modules or computer talking to each other through the network. Ever wondered why your radio volume goes up when you accelerate the vehicle? That's the engine computer or module telling the radio to raise the volume due to a higher RPM and hence higher ambient noise. It is also common to see a non-shifting transmission due to a faulty network and the issue not being related to the transmission at all. Hopefully this book will shed some light on the operation and knowledge needed to tackle automotive networks in today's vehicles..... Enjoy. Table of Contents 1. INTRODUCTION * - Automotive inter-module communication systems or networks * - Asian, Domestic and European Vehicles * - Fully Networked vehicles. 2. THE NEED FOR IN-VEHICLE NETWORKING * - Use of electrical and electronic components * - Networked automotive sensors. * - Sharing of sensor information * - Weight savings and the simpler wiring harnesses * - Networking and modular systems 3. 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CAN (Controller Area Network) * - implementation of the CAN protocol * - 11 bit and 29 bit identifier * - EPA approved for MY 2003 and up * - CAN A, B and C * - MID and PID CAN identifiers * - Master time-keeper-node * - Drive-by-wire systems * - Byteflight, Flexray, and Time-triggered CAN or TTCAN * - The CAN Data-Frame * - The CAN bus-access arbitration * - SOF (start-of-frame) bit * - Control bit * - Arbitration bits * - Data bits * - EOF or end of frame bit Embedded Systems Architecture-Tammy Noergaard 2012-12-31 Embedded Systems Architecture is a practical and technical guide to understanding the components that make up an embedded system's architecture. This book is perfect for those starting out as technical professionals such as engineers, programmers and designers of embedded systems; and also for students of computer science, computer engineering and electrical engineering. It gives a much-needed 'big picture' for recently graduated engineers grappling with understanding the design of real-world systems for the first time, and provides professionals with a systems-level picture of the key elements that can go into an embedded design, providing a firm foundation on which to build their skills. Real-world approach to the fundamentals, as well as the design and architecture process, makes this book a popular reference for the daunted or the inexperienced: if in doubt, the answer is in here! Fully updated with new coverage of FPGAs, testing, middleware and the latest programming techniques in C, plus complete source code and sample code, reference designs and tools online make this the complete package Visit the companion web site at http://booksite.elsevier.com/9780123821966/ for source code, design examples, data sheets and more A true introductory book, provides a comprehensive get up and running reference for those new to the field, and updating skills: assumes no prior knowledge beyond undergrad level electrical engineering Addresses the needs of practicing engineers, enabling it to get to the point more directly, and cover more ground. Covers hardware, software and middleware in a single volume Includes a library of design examples and design tools, plus a complete set of source code and embedded systems design tutorial materials from companion website Mastering NetScaler VPX™-Rick Roetenberg 2015-11-23 Learn how to deploy and configure all the available Citrix NetScaler features with the best practices and techniques you need to know About This Book Implement and configure all the available NetScaler Application Delivery features and monitor NetScaler VPX performance in your environment Packed with real-world NetScaler deployment scenarios to help you see the configuration principles in action Integrate NetScaler with other Citrix technologies, including CloudBridge, Application Delivery Controller, HDX Insight, and Command Center Who This Book Is For If you're an administrator with prior experience using NetScaler then you have everything you need to make the most of this book. What You Will Learn Configure the more commonly used NetScaler VPX features such as basic load balancing, authentication, NetScaler Gateway, and StoreFront Configure the AppExpert features such as Responder, Rewrite, AppExpert templates, parsing HTTP, TCP, and UDP data Integrate NetScaler with other Citrix technologies such as CloudBridge, Insight Center, and Command Center Optimize traffic using caching, front-end optimization, and compression Dive deep in the security, caching, and compression enhancements protect your environment With AAA and Application Firewall, or from HTTP DDoS attacks Troubleshoot an environment using tools such as TaaS and WireShark In Detail Citrix NetScaler is one of the best Application Delivery Controller products in the world. The Application Delivery Controllers are commonly used for load balancing purposes, to optimize traffic, and to perform extra security steps. This book will give you an insight into all the available features that the Citrix NetScaler appliance has to offer. The book will start with the commonly used NetScaler VPX features, such as load balancing and NetScaler Gateway functionality. Next, we cover features such as Responder, Rewrite, and the AppExpert templates, and how to configure these features. After that, you will learn more about the other available Citrix technologies that can interact with Citrix NetScaler. We also cover troubleshooting, optimizing traffic, caching, performing protection using Application Firewall, and denying HTTP DDoS attacks for web services. Finally, we will demonstrate the different configuration principles real-world Citrix NetScaler deployment scenarios. Style and approach This easy-to-follow guide explains as much as possible about each feature and its configuration. Each topic is explained sequentially in the process of configuring and deploying the feature. Sticker by Number: Calming Creatures-Shane Madden 2017-11-21 Sticker by Number: Calming Creatures is a creative and meditative experience. Like an old-fashioned paint by number, the designs in the book can be gradually filled in using the included stickers, transforming the delicate line drawings into stunning, full-color masterpieces. The process is at once artistic and calming—the perfect way to exercise your creativity and create a moment of tranquility in a busy day. The book features 12 different creatures—from a boldly patterned elephant to a delicate swan—all of which are paired with mindful meditation exercises related to the animal. For instance, as you piece together the Lion design you will be guided to meditate on the self-confidence that inspires bravery, while the Horse illustration will prompt reflection on the theme of freedom and the pursuit of ambition. With beautiful illustrations and insightful text, Sticker by Number: Calming Creatures will help readers step outside of life's frantic rush, unlock their creativity, and discover a sense of peace. High Performance Browser Networking-Ilya Grigorik 2013-09-11 How prepared are you to build fast and efficient web applications? This eloquent book provides what every web developer should know about the network, from fundamental limitations that affect performance to major innovations for building even more powerful browser applications—including HTTP 2.0 and XHR improvements, Server-Sent Events (SSE), WebSocket, and WebRTC. Author Ilya Grigorik, a web performance engineer at Google, demonstrates performance optimization best practices for TCP, UDP, and TLS protocols, and explains unique wireless and mobile network optimization requirements. You'll then dive into performance characteristics of technologies such as HTTP 2.0, client-side network scripting with XHR, real-time streaming with SSE and WebSocket, and P2P communication with WebRTC. Deliver superlative TCP, UDP, and TLS performance Speed up network performance over 3G/4G mobile networks Develop fast and energy-efficient mobile applications Address bottlenecks in HTTP 1.x and other browser protocols Plan for and deliver the best HTTP 2.0 performance Enable efficient real-time streaming in the browser Create efficient peer-to-peer videoconferencing and low-latency applications with real-time WebRTC transports Network Know-How-John Ross 2009 A guide to creating a home computer network covers such as implementing network addressing, configuring network adapters and routers, sharing music and photos, automating household appliances, and troubleshooting. Bury My Heart at Wounded Knee-Dee Brown 2012-10-23 The "fascinating" #1 New York Times bestseller that awakened the world to the destruction of American Indians in the nineteenth-century West (The Wall Street Journal). First published in 1970, Bury My Heart at Wounded Knee generated shockwaves with its frank and heartbreaking depiction of the systematic annihilation of American Indian tribes across the western frontier. In this nonfiction account, Dee Brown focuses on the betrayals, battles, and massacres suffered by American Indians between 1860 and 1890. He tells of the many tribes and their renowned chiefs—from Geronimo to Red Cloud, Sitting Bull to Crazy Horse—who struggled to combat the destruction of their people and culture. Forcefully written and meticulously researched, Bury My Heart at Wounded Knee inspired a generation to take a second look at how the West was won. This ebook features an illustrated biography of Dee Brown including rare photos from the author's personal collection. Designing with the Mind in Mind-Jeff Johnson 2010-05-20 Early user interface (UI) practitioners were trained in cognitive psychology, from which UI design rules were based. But as the field evolves, designers enter the field from many disciplines. Practitioners today have enough experience in UI design that they have been exposed to design rules, but it is essential that they understand the psychology behind the rules in order to effectively apply them. In Designing with the Mind in Mind, Jeff Johnson, author of the best selling GUI Blooper, provides designers with just enough background in perceptual and cognitive psychology that UI design guidelines make intuitive sense rather than being just a list of rules to follow. The first practical, all-in-one source for practitioners on user interface design rules and why, when and how to apply them Provides just enough background into the reasoning behind interface design rules that practitioners can make informed decisions in every project Gives practitioners the insight they need to make educated design decisions when confronted with tradeoffs, including competing design rules, time constraints, or limited resources CCNA Wireless Study Guide-Todd Lammle 2010-08-26 A complete guide to the CCNA Wireless exam by leading networking authority Todd Lammle The CCNA Wireless certification is the most respected entry-level certification in this rapidly growing field. Todd Lammle is the undisputed authority on networking, and this book focuses exclusively on the skills covered in this Cisco certification exam. The CCNA Wireless Study Guide joins the popular Sybex study guide family and helps network administrators advance their careers with a highly desirable certification. The CCNA Wireless certification is the most respected entry-level wireless certification for system administrators looking to advance their careers Written by Todd Lammle, the leading networking guru and author of numerous bestselling certification guides Provides in-depth coverage of every exam objective and the technology developed by Cisco for wireless networking Covers WLAN fundamentals, installing a basic Cisco wireless LAN and wireless clients, and implementing WLAN security Explains the operation of basic WCS, basic WLAN maintenance, and troubleshooting Companion CD includes the Sybex Test Engine, flashcards, and entire book in PDF format Includes hands-on labs, end-of-chapter review questions, Exam Essentials overview, Real World Scenarios, and a tear-out objective map showing where each exam objective is covered The CCNA Wireless Study Guide prepares any network

administrator for exam success. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

Packet Guide to Voice Over IP-Bruce Hartpence 2013 Go under the hood of an operating Voice over IP network, and build your knowledge of the protocols and architectures used by this Internet telephony technology. With this concise guide, you'll learn about services involved in VoIP and get a first-hand view of network data packets from the time the phones boot through calls and subsequent connection teardown. With packet captures available on the companion website, this book is ideal whether you're an instructor, student, or professional looking to boost your skill set. Each chapter includes a set of review questions, as well as practical, hands-on lab exercises. Learn the requirements for deploying packetized voice and video Understand traditional telephony concepts, including local loop, tip and ring, and T carriers Explore the Session Initiation Protocol (SIP), VoIP's primary signaling protocol Learn the operations and fields for VoIP's standardized RTP and RTCP transport protocols Delve into voice and video codecs for converting analog data to digital format for transmission Get familiar with Communications Systems H.323, SIP's widely used predecessor Examine the Skinny Client Control Protocol used in Cisco VoIP phones in networks around the world

Complete Guide to Test Automation-Arnon Axelrod 2018-09-22 Rely on this robust and thorough guide to build and maintain successful test automation. As the software industry shifts from traditional waterfall paradigms into more agile ones, test automation becomes a highly important tool that allows your development teams to deliver software at an ever-increasing pace without compromising quality. Even though it may seem trivial to automate the repetitive tester's work, using test automation efficiently and properly is not trivial. Many test automation endeavors end up in the "graveyard" of software projects. There are many things that affect the value of test automation, and also its costs. This book aims to cover all of these aspects in great detail so you can make decisions to create the best test automation solution that will not only help your test automation project to succeed, but also allow the entire software project to thrive. One of the most important details that affects the success of the test automation is how easy it is to maintain the automated tests. Complete Guide to Test Automation provides a detailed hands-on guide for writing highly maintainable test code. What You'll Learn Know the real value to be expected from test automation Discover the key traits that will make your test automation project succeed Be aware of the different considerations to take into account when planning automated tests vs. manual tests Determine who should implement the tests and the implications of this decision Architect the test project and fit it to the architecture of the tested application Design and implement highly reliable automated tests Begin gaining value from test automation earlier Integrate test automation into the business processes of the development team Leverage test automation to improve your organization's performance and quality, even without formal authority Understand how different types of automated tests will fit into your testing strategy, including unit testing, load and performance testing, visual testing, and more Who This Book Is For Those involved with software development such as test automation leads, QA managers, test automation developers, and development managers. Some parts of the book assume hands-on experience in writing code in an object-oriented language (mainly C# or Java), although most of the content is also relevant for nonprogrammers.

Exploring BeagleBone-Derek Molloy 2014-12-05 In-depth instruction and practical techniques for buildingwith the BeagleBone embedded Linux platform Exploring BeagleBone is a hands-on guide to bringinggadgets, gizmos, and robots to life using the popular BeagleBoneembedded Linux platform. Comprehensive content and deep detailprovide more than just a BeagleBone instructionmanual—you'll also learn the underlying engineeringtechniques that will allow you to create your own projects. Thebook begins with a foundational primer on essential skills, andthen gradually moves into communication, control, and advancedapplications using C/C++, allowing you to learn at your own pace.In addition, the book's companion website featuresinstructional videos, source code, discussion forums, and more, toensure that you have everything you need. The BeagleBone's small size, high performance, low cost,and extreme adaptability have made it a favorite developmentplatform, and the Linux software base allows for complex yetflexible functionality. The BeagleBone has applications in smartbuildings, robot control, environmental sensing, to name a few,and, expansion boards and peripherals dramatically increase thepossibilities. Exploring BeagleBone provides areader-friendly guide to the device, including a crash coursein computer engineering. While following step by step, you can: Get up to speed on embedded Linux, electronics, andprogramming Master interfacing electronic circuits, buses and modules, withpractical examples Explore the Internet-connected BeagleBone and the BeagleBonewith a display Apply the BeagleBone to sensing applications, including videoand sound Explore the BeagleBone's Programmable Real-TimeControllers Hands-on learning helps ensure that your new skills stay withyou, allowing you to design with electronics, modules, orperipherals even beyond the BeagleBone. Insightful guidance andonline peer support help you transition from beginner to expert asyou master the techniques presented in Exploring BeagleBone,the practical handbook for the popular computing platform.

The Art of Game Design-Jesse Schell 2008-08-04 Anyone can master the fundamentals of game design - no technological expertise is necessary. The Art of Game Design: A Book of Lenses shows that the same basic principles of psychology that work for board games, card games and athletic games also are the keys to making top-quality videogames. Good game design happens when you view your game from many different perspectives, or lenses. While touring through the unusual territory that is game design, this book gives the reader one hundred of these lenses - one hundred sets of insightful questions to ask yourself that will help make your game better. These lenses are gathered from fields as diverse as psychology, architecture, music, visual design, film, software engineering, theme park design, mathematics, writing, puzzle design, and anthropology. Anyone who reads this book will be inspired to become a better game designer - and will understand how to do it. Mapping Out the Research-policy Matrix-Germán Solinis 2011 Social science research provides not only abstract, conceptual knowledge about society but also concrete, instrumental knowledge. It enables us to take action to recompose the world we live in. However, this book rejects narrow and simplistic conceptions of research use and its impact on policy-making, to embrace a more complex approach to seeing and dealing with social science. In the paradigm of "evidence-based policy", "evidence" is understood in its broad sense as information that helps form policies. Nonetheless, within current practices and discourse, it is not clear what "information" is, what is really meant by "evidence", and how it can be obtained objectively. The book draws on papers presented at the International Forum on the Social Science-Policy Nexus, where experts examined current practices and problems in areas such as social policy, migration, urban policies and globalisation. The Forum set a precedent in terms of dialogue between researchers and policy-makers. The authors contribute to enriching and elucidating the most common conceptualisations of the research-policy nexus. They represent a rich diversity of views, although most agree that an effective strategy to enhance social science-policy linkages should be underpinned by a theoretical and methodological framework that takes into account the interplay of different social actors.

Essential SNMP-Douglas Mauro 2005 Simple Network Management Protocol (SNMP) provides a "simple" set of operations that allows you to more easily monitor and manage network devices like routers, switches, servers, printers, and more. The information you can monitor with SNMP is wide-ranging—from standard items, like the amount of traffic flowing into an interface, to far more esoteric items, like the air temperature inside a router. In spite of its name, though, SNMP is not especially simple to learn. O'Reilly has answered the call for help with a practical introduction that shows how to install, configure, and manage SNMP. Written for network and system administrators, the book introduces the basics of SNMP and then offers a technical background on how to use it effectively. Essential SNMP explores both commercial and open source packages, and elements like OIDs, MIBs, community strings, and traps are covered in depth. The book contains five new chapters and various updates throughout. Other new topics include: Expanded coverage of SNMPv1, SNMPv2, and SNMPv3 Expanded coverage of SNMPc The concepts behind network management and change management RRDTool and Cricket The use of scripts for a variety of tasks How Java can be used to create SNMP applications Net-SNMP's Perl module The bulk of the book is devoted to discussing, with real examples, how to use SNMP for system and network administration tasks. Administrators will come away with ideas for writing scripts to help them manage their networks, create managed objects, and extend the operation of SNMP agents. Once demystified, SNMP is much more accessible. If you're looking for a way to more easily manage your network, look no further than Essential SNMP, 2nd Edition.

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