

Webrtc Integrators Guide

This book on SDP is the first of this kind that attempts to put all SDP related RFCs together with their mandatory and optional texts in a chronological systematic way as if people can use a single “super-SDP RFC” with almost one-to-one integrity from beginning to end to see the big picture of SDP in addition to base SDP functionalities.

Build enterprise chatbots for web, social media, voice assistants, IoT, and telephony contact centers with Google's Dialogflow conversational AI technology. This book will explain how to get started with conversational AI using Google and how enterprise users can use Dialogflow as part of Google Cloud. It will cover the core concepts such as Dialogflow essentials, deploying chatbots on web and social media channels, and building voice agents including advanced tips and tricks such as intents, entities, and working with context. The Definitive Guide to Conversational AI with Dialogflow and Google Cloud also explains how to build multilingual chatbots, orchestrate sub chatbots into a bigger conversational platform, use virtual agent analytics with popular tools, such as BigQuery or Chatbase, and build voice bots. It concludes with coverage of more advanced use cases, such as building fulfillment functionality, building your own integrations, securing your chatbots, and building your own voice platform with the Dialogflow SDK and other Google Cloud machine learning APIs. After reading this book, you will understand how to build cross-channel enterprise bots with popular Google tools such as Dialogflow, Google Cloud AI, Cloud Run, Cloud Functions, and Chatbase. ??What You Will Learn Discover Dialogflow, Dialogflow Essentials, Dialogflow CX, and how machine learning is used Create Dialogflow projects for individuals and enterprise usage Work with Dialogflow essential concepts such as intents, entities, custom entities, system entities, composites, and how to track context Build bots quickly using prebuilt agents, small talk modules, and FAQ knowledge bases Use Dialogflow for an out-of-the-box agent review Deploy text conversational UIs for web and social media channels Build voice agents for voice assistants, phone gateways, and contact centers Create multilingual chatbots Orchestrate many sub-chatbots to build a bigger conversational platform Use chatbot analytics and test the quality of your Dialogflow agent See the new Dialogflow CX concepts, how Dialogflow CX fits in, and what's different in Dialogflow CX Who This Book Is For Everyone interested in building chatbots for web, social media, voice assistants, or contact centers using Google's conversational AI/cloud technology.

This bestselling guide makes it easy to learn how to design a complete Voice over IP (VoIP) or traditional PBX system with Asterisk, with a detailed roadmap that shows readers how to install and configure this open source software, whether upgrading an existing phone system or starting from scratch.

A project-based, practical guide to get hands-on into Vue.js 2.5 development by building beautiful, functional and performant web applications About This Book Build exciting real world web projects from scratch and become proefficient with Vue.js Web Development Take your app to the next level with animation, routing, state management, server-side rendering and i18n Learn professional web programming techniques to supercharge your Vue.js projects Who This Book Is For If you are a web developer who now wants to create rich and interactive professional applications using Vue.js, then this book is for you. Prior knowledge of JavaScript is assumed. Familiarity with HTML, Node.js, and tools such as npm and webpack will be helpful but not necessary. What You Will Learn Set up a full Vue.js npm project with the webpack build tool and the official scaffolding tool, vue-cli Write automatically updated templates with directives to create a dynamic web application Structure the app with reusable and maintainable components Create delightful user experiences with animations Use build tools and preprocessor to make larger professional applications Create a multi-page application with the official Vue.js routing library Integrate non-Vue.js elements into your apps like Google Maps Use the official state-management library to prevent errors Optimize your app for SEO and performance with server-side rendering and internationalization In Detail Do you want to make your web application amazingly responsive? Are you unhappy with your app's performance and looking forward to trying out ways to make your app more powerful? Then Vue.js, a framework for building user interfaces, is a great choice, and this book is the ideal way to put it through its paces. This book's project-based approach will get you to build six stunning applications from scratch and gain valuable insights in Vue.js 2.5. You'll start by learning the basics of Vue.js and create your first web app using directives along with rich and attractive user experiences. You will learn about animations and interactivity by creating a browser-based game. Using the available tools and preprocessor, you will learn how to create multi-page apps with plugins. You will create highly efficient and performant functional components for your app. Next, you will create your own online store and optimize it. Finally, you will integrate Vue.js with the real-time Meteor library and create a dashboard showing real-time data. By the end of this book you will have enough skills and will have worked through enough examples of real Vue.js projects to create interactive professional web applications with Vue.js 2.5. Style and approach Project-based guide that will help you start building applications immediately with an easy to follow approach. Our book will have 6 concrete projects. It will take readers through clear and logical steps, with screenshots and tips along the way to help you follow the guide and learn how to get more from Vue.js.

WebRTC, Web Real-Time Communications, is revolutionizing the way web users communicate, both in the consumer and enterprise worlds. WebRTC adds standard APIs (Application Programming Interfaces) and built-in real-time audio and video capabilities and codecs to browsers without a plug-in. With just a few lines of JavaScript, web developers can add high quality peer-to-peer voice, video, and data channel communications to their collaboration, conferencing, telephony, or even gaming site or application. New for the Third Edition The third edition has an enhanced demo application which now shows the use of the data channel for real-time text sent directly between browsers. Also, a full description of the browser media negotiation process including actual SDP session descriptions from Firefox and Chrome. Hints on how to use Wireshark to monitor WebRTC protocols, and example captures are also included. TURN server support for NAT and firewall traversal is also new. This edition also features a step-by-step introduction to WebRTC, with concepts such as local media, signaling, and the Peer Connection introduced through separate runnable demos. Written by experts involved in the standardization effort, this book contains the most up to date discussion of WebRTC standards in W3C and IETF. Packed with figures, example code, and summary tables, this book is the ultimate WebRTC reference. Table of Contents 1 Introduction to Web Real-Time Communications 1.1 WebRTC Introduction 1.2 Multiple Media Streams in WebRTC 1.3 Multi-Party Sessions in WebRTC 1.4 WebRTC Standards 1.5 What is New in WebRTC 1.6 Important Terminology Notes 1.7 References 2 How to Use WebRTC 2.1 Setting Up a WebRTC Session 2.2 WebRTC Networking and Interworking Examples 2.3 WebRTC Pseudo-Code Example 2.4 References 3 Local Media 3.1 Media in WebRTC 3.2 Capturing Local Media 3.3 Media Selection and Control 3.4 Media Streams Example 3.5 Local Media Runnable Code Example 4 Signaling 4.1 The Role of Signaling 4.2 Signaling Transport 4.3 Signaling Protocols 4.4 Summary of Signaling Choices 4.5 Signaling Channel Runnable Code Example 4.6 References 5 Peer-to-Peer Media 5.1 WebRTC Media Flows 5.2 WebRTC and Network Address Translation (NAT) 5.3 STUN Servers 5.4 TURN Servers 5.5 Candidates 6 Peer Connection and Offer/Answer Negotiation 6.1 Peer Connections 6.2 Offer/Answer Negotiation 6.3 JavaScript Offer/Answer Control 6.4 Runnable Code Example: Peer Connection and Offer/Answer Negotiation 7 Data Channel 7.1 Introduction to the Data Channel 7.2 Using Data Channels 7.3 Data Channel Runnable Code Example 7.3.1 Client WebRTC Application 8 W3C Documents 8.1 WebRTC API Reference 8.2 WEBRTC Recommendations 8.3 WEBRTC Drafts 8.4 Related Work 8.5 References 9 NAT and Firewall Traversal 9.1 Introduction to Hole Punching 9.3 WebRTC and Firewalls 9.3.1 WebRTC Firewall Traversal 9.4 References 10 Protocols 10.1 Protocols 10.2 WebRTC Protocol Overview 10.3 References 11 IETF Documents 11.1 Request For Comments 11.2 Internet-Drafts 11.3 RTCWEB Working Group Internet-Drafts 11.4 Individual Internet-Drafts 11.5 RTCWEB Documents in Other Working Groups 11.6 References 12 IETF Related RFC Documents 12.1 Real-time Transport Protocol 12.2 Session Description Protocol 12.3 NAT Traversal RFCs 12.4 Codecs 12.5 Signaling 12.6 References 13 Security and Privacy 13.1 Browser Security Model 13.2 New WebRTC

Browser Attacks 13.3 Communication Security 13.4 Identity in WebRTC 13.5 Enterprise Issues 14 Implementations and Uses INDEX ABOUT THE AUTHORS

Written with students and professors in mind, *Analysis of Queues: Methods and Applications* combines coverage of classical queueing theory with recent advances in studying stochastic networks. Exploring a broad range of applications, the book contains plenty of solved problems, exercises, case studies, paradoxes, and numerical examples. In addition to the standard single-station and single class discrete queues, the book discusses models for multi-class queues and queueing networks as well as methods based on fluid scaling, stochastic fluid flows, continuous parameter Markov processes, and quasi-birth-and-death processes, to name a few. It describes a variety of applications including computer-communication networks, information systems, production operations, transportation, and service systems such as healthcare, call centers and restaurants.

There's no doubt that the JavaScript ecosystem changes fast. Not only are new tools and frameworks introduced and developed at a rapid rate, the language itself has undergone big changes with the introduction of ES2015 (aka ES6). Understandably, many articles have been written complaining about how difficult it is to learn modern JavaScript development these days. We're aiming to minimize that confusion with this set of books on modern JavaScript. This book presents six complete JavaScript projects; each taking advantage of modern JavaScript and its ecosystem. You'll learn to build several different apps, and along the way you'll pick up a ton of useful advice, tips, and techniques. It contains: Build a Full-Sphere 3D Image Gallery with React VR by Michaela Lehr Build a WebRTC Video Chat Application with SimpleWebRTC by Michael Wanyoike Build a JavaScript Single Page App Without a Framework by Michael Wanyoike Build a To-do List with Hyperapp, the 1KB JS Micro-framework by Darren Jones Use Parcel to Bundle a Hyperapp App & Deploy to GitHub Pages by Darren Jones Interactive Data Visualization with Modern JavaScript and D3 by Adam Janes This book is for all front-end developers who wish to improve their JavaScript skills. You'll need to be familiar with HTML and CSS and have a reasonable level of understanding of JavaScript in order to follow the discussion.

This book is for programmers who want to learn about real-time communication and utilize the full potential of WebRTC. It is assumed that you have working knowledge of setting up a basic telecom infrastructure as well as basic programming and scripting knowledge.

2012 Jolt Award finalist! Pioneering the Future of Software Test Do you need to get it right, too? Then, learn from Google. Legendary testing expert James Whittaker, until recently a Google testing leader, and two top Google experts reveal exactly how Google tests software, offering brand-new best practices you can use even if you're not quite Google's size...yet! Breakthrough Techniques You Can Actually Use Discover 100% practical, amazingly scalable techniques for analyzing risk and planning tests...thinking like real users...implementing exploratory, black box, white box, and acceptance testing...getting usable feedback...tracking issues...choosing and creating tools...testing "Docs & Mocks," interfaces, classes, modules, libraries, binaries, services, and infrastructure...reviewing code and refactoring...using test hooks, presubmit scripts, queues, continuous builds, and more. With these techniques, you can transform testing from a bottleneck into an accelerator—and make your whole organization more productive!

A comprehensive, hands-on guide on unit testing framework for Java programming language About This Book In-depth coverage of Jupiter, the new programming and extension model provided by JUnit 5 Integration of JUnit 5 with other frameworks such as Mockito, Spring, Selenium, Cucumber, and Docker Best practices for writing meaningful Jupiter test cases Who This Book Is For This book is for Java software engineers and testers. If you are a Java developer who is keen on improving the quality of your code and building world class applications then this book is for you. Prior experience of the concepts of automated testing will be helpful. What You Will Learn The importance of software testing and its impact on software quality The options available for testing Java applications The architecture, features and extension model of JUnit 5 Writing test cases using the Jupiter programming model How to use the latest and advanced features of JUnit 5 Integrating JUnit 5 with existing third-party frameworks Best practices for writing meaningful JUnit 5 test cases Managing software testing activities in a living software project In Detail When building an application it is of utmost importance to have clean code, a productive environment and efficient systems in place. Having automated unit testing in place helps developers to achieve these goals. The JUnit testing framework is a popular choice among Java developers and has recently released a major version update with JUnit 5. This book shows you how to make use of the power of JUnit 5 to write better software. The book begins with an introduction to software quality and software testing. After that, you will see an in-depth analysis of all the features of Jupiter, the new programming and extension model provided by JUnit 5. You will learn how to integrate JUnit 5 with other frameworks such as Mockito, Spring, Selenium, Cucumber, and Docker. After the technical features of JUnit 5, the final part of this book will train you for the daily work of a software tester. You will learn best practices for writing meaningful tests. Finally, you will learn how software testing fits into the overall software development process, and sits alongside continuous integration, defect tracking, and test reporting. Style and approach The book offers definitive and comprehensive coverage of all the Unit testing concepts with JUnit and its features using several real world examples so that readers can put their learning to practice almost immediately. This book is structured in three parts: Software testing foundations (software quality and Java testing) JUnit 5 in depth (programming and extension model of JUnit 5) Software testing in practice (how to write and manage JUnit 5 tests)

Take full creative control of your web applications with Flask, the Python-based microframework. With this hands-on book, you'll learn Flask from the ground up by developing a complete social blogging application step-by-step. Author Miguel Grinberg walks you through the framework's core functionality, and shows you how to extend applications with advanced web techniques such as database migration and web service communication. Rather than impose development guidelines as other frameworks do, Flask leaves the business of extensions up to you. If you have Python experience, this book shows you how to take advantage of that creative freedom. Learn Flask's basic application structure and write an example app Work with must-have components—templates, databases, web forms, and email support Use packages and modules to structure a large application that scales Implement user authentication, roles, and profiles Build a blogging feature by reusing templates, paginating item lists, and working with rich text Use a Flask-based RESTful API to expose app functionality to smartphones, tablets, and other third-party clients Learn how to run unit tests and enhance application performance Explore options for deploying your web app to a production server

LEARN REACT TODAY The up-to-date, in-depth, complete guide to React and friends. Become a ReactJS expert today

Provides information on Asterisk, an open source telephony application.

Build a Next-Generation Enterprise Digital Platform with Portals and UXP A Complete Guide to Portals and User Experience Platforms provides in-depth coverage of portal technologies and user experience platforms (UXPs), which form the key pillars of a modern digital platform. Drawing on his experience in various roles in numerous portal engagements, the author gives you different perspectives of the same technology platform. The first section introduces portal through multiple viewpoints to cater to a wide audience, including business, operations, development, integration, performance, and architecture views. The book details many novel and practically proven models and frameworks, such as portal value realization framework, portal assessment framework, portal evaluation model, portal infrastructure planning techniques, and portal integration techniques. You also learn about effective digital program strategies, including portal roadmap strategy, collaboration strategy, portal security planning, portal testing strategy, SEO, and analytics planning concepts. The second section dives into UXP and advanced topics. It elaborates on UXP design concepts, including UXP reference architecture, customer touch point analysis, user experience mapping, and responsive web design. It also looks at advanced topics, such as next-generation portals, portal trends, portal user experience strategy, omni-channel strategy, portal KPI, portal pitfalls and best practices, portal security, portal governance, digital program

management, and portal performance engineering. In the third section, the book presents four case studies related to intranet portals, retail portals, customer service portals, and portal content management. It discusses business drivers, challenges, portal solutions, and solution benefits for each of the case studies. Written by a seasoned practitioner, this book balances the core topics of modern portals along with emerging technologies in the digital space. Suitable for the entire digital technology community, including IT managers, digital architects, developers, and testers, it provides you with a practical guide for successfully building best practices-based digital platforms with forward-looking features.

Master the art of advanced VoIP and WebRTC communication with the most dynamic application server, FreeSWITCH About This Book Forget the hassle - make FreeSWITCH work for you Discover how FreeSWITCH integrates with a range of tools and APIs From high availability to IVR development use this book to become more confident with this useful communication software Who This Book Is For SysAdmins, VoIP engineers – whoever you are, whatever you're trying to do, this book will help you get more from FreeSWITCH. What You Will Learn Get to grips with the core concepts of FreeSWITCH Learn FreeSWITCH high availability Work with SIP profiles, gateways, ITSPs, and Codecs optimization Implement effective security on your projects Master audio manipulation and recording Discover how FreeSWITCH works alongside WebRTC Build your own complex IVR and PBX applications Connect directly to PSTN/TDM Create your own FreeSWITCH module Trace SIP packets with the help of best open source tools Implement Homer Sipcapture to troubleshoot and debug all your platform traffic In Detail FreeSWITCH is one of the best tools around if you're looking for a modern method of managing communication protocols through a range of different media. From real-time browser communication with the WebRTC API to implementing VoIP (voice over internet protocol), with FreeSWITCH you're in full control of your projects. This book shows you how to unlock its full potential – more than just a tutorial, it's packed with plenty of tips and tricks to make it work for you. Written by members of the team who actually helped build FreeSWITCH, it will guide you through some of the newest features of version 1.6 including video transcoding and conferencing. Find out how FreeSWITCH interacts with other tools and APIs, learn how to tackle common (and not so common) challenges ranging from high availability to IVR development and programming advanced PBXs. Great communication functionality begins with FreeSWITCH – find out how and get your project up and running today. Style and approach Find out how it works, then put your knowledge into practice - that's how this advanced FreeSWITCH guide has been designed to help you learn. You'll soon master FreeSWITCH and be confident using it in your projects.

Explore what React, Node, TypeScript, Webpack, and Docker have to offer individually, and how they all fit together in modern app development. React is one of the most popular web development tools available today, and Node.js is extremely popular for server-side development. The fact that both utilize JavaScript is a big selling point, but as developers use the language more, they begin to recognize the shortcomings, and that's where TypeScript comes in and why it's gaining in popularity quickly. Add Webpack and Docker to the mix, and you've got a potent full development stack on which to build applications. You'll begin by building a solid foundation of knowledge and quickly expand it by constructing two different real-world apps. These aren't just simple, contrived examples but real apps that you can choose to install on your servers and use for real. By the end, you will have a solid grasp of building apps with React, Node.js, and TypeScript and a good grasp on how Webpack can be used to optimize and organize your code for deployment. You'll also understand how Docker can be used to run the apps you build in a clear and well-defined way, all of which will be able to springboard you into creating more advanced apps on your own. What You'll Learn Get a project started and logically structure it Construct a user interface with React and Material-UI Use WebSockets for real-time communication between client and server Build a REST API with Node and Express as another approach to client-server communication Package the app with Webpack for optimized delivery Take a completed app and wrap it up with Docker for easy distribution Review a host of other ancillary topics including NPM, Semantic versioning, Babel, NoSQL, and more Who This Book Is For Web developers with basic knowledge of HTML, JavaScript, CSS, and CLI tools who are interested in and in all aspects of application development, and using TypeScript instead of straight JavaScript.

Debian GNU/Linux, a very popular non-commercial Linux distribution, is known for its reliability and richness. Built and maintained by an impressive network of thousands of developers throughout the world, the Debian project is cemented by its social contract. This foundation text defines the project's objective: fulfilling the needs of users with a 100% free operating system. The success of Debian and of its ecosystem of derivative distributions (with Ubuntu at the forefront) means that an increasing number of administrators are exposed to Debian's technologies. This Debian Administrator's Handbook, which has been entirely updated for Debian 8 “Jessie”, builds on the success of its 6 previous editions. Accessible to all, this book teaches the essentials to anyone who wants to become an effective and independent Debian GNU/Linux administrator. It covers all the topics that a competent Linux administrator should master, from installation to updating the system, creating packages and compiling the kernel, but also monitoring, backup and migration, without forgetting advanced topics such as setting up SELinux or AppArmor to secure services, automated installations, or virtualization with Xen, KVM or LXC. This book is not only designed for professional system administrators. Anyone who uses Debian or Ubuntu on their own computer is de facto an administrator and will find tremendous value in knowing more about how their system works. Being able to understand and resolve problems will save you invaluable time. Learn more about the book on its official website: debian-handbook.info

This guide show you how to ingest your WebRTC media stream into the AWS Elemental MediaLive infrastructure to broadcast your stream leveraging all benefits of the AWS infrastructure. WebRTC make real time video transmission for video calls or conferences easier than ever. As it is standardizes it also becomes more and more relevant in other devices like embedded cameras. WebRTC however does not easily scale to big audiences and broadcasting. This is where AWS Elemental MediaLive comes into play. It is the perfect match for high reliability mass broadcast. The problem is to connect those two worlds. Unfortunately AWS Elemental MediaLive can't ingest WebRTC media streams as an input. This is related to one of the major issues WebRTC has with mass adoption and integration: whereas the media layer of WebRTC is standardized and WebRTC take control off all potential connectivity issues, the signaling channel is completely up to he user. This means there is no standard way on integrating with an existing WebRTC service. Some 'glue' is required. This guide shows the easiest and reliable approach to create this glue: to interface with your existing WebRTC infrastructure and convert its media to a format that can easily ingested in AWS Elemental MediaLive.

If you are a JavaScript developer with a basic knowledge of WebRTC and software development, but want to explore how to use it in more depth, this book is for you.

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 Design a complete Voice over IP (VoIP) or traditional PBX system with Asterisk, even if you have only basic telecommunications knowledge. This bestselling guide makes it easy, with a detailed roadmap that shows you how to install and configure this open source software, whether you're upgrading your existing phone system or starting from scratch. Ideal for Linux administrators, developers, and power users, this updated edition shows you how to write a basic dialplan step-by-step, and brings you up to speed on the features in Asterisk 11, the latest long-term support release from Digium. You'll quickly gain working knowledge to build a simple yet inclusive system. Integrate Asterisk with analog, VoIP, and digital telephony systems Build an interactive dialplan, using best practices for more advanced features Delve into voicemail options, such as storing messages in a database Connect to external services including Google Talk, XMPP, and calendars Incorporate Asterisk features and functions into a relational database to facilitate information sharing Learn how to use Asterisk's security, call routing, and faxing features Monitor and control your system with the Asterisk Manager Interface (AMI) Plan for expansion by learning tools for building distributed systems This practical guide takes a hands-on approach to implementation and associated methodologies to have you up and running with all that Amazon Kinesis has to offer. You'll work with use cases and practical examples to be able to ingest, process, analyze, and stream real-time data in no time.

Learn how to create beautiful, interactive, browser-based data visualizations with the D3 JavaScript library. This hands-on book shows you how to use a combination of JavaScript and SVG to build everything from simple bar charts to complex infographics. You'll learn how to use basic D3 tools by building visualizations based on real data from the New York Metropolitan Transit Authority. Using historical tables, geographical information, and other data, you'll graph bus breakdowns and accidents and the percentage of subway trains running on time, among other examples. By the end of the book, you'll be prepared to build your own web-based data visualizations with D3. Join a dataset with elements of a webpage, and modify the elements based on the data Map data values onto pixels and colors with D3's scale objects Apply axis and line generators to simplify aspects of building visualizations Create a simple UI that allows users to investigate and compare data Use D3 transitions in your UI to animate important aspects of the data Get an introduction to D3 layout tools for building more sophisticated visualizations If you can code and manipulate data, and know how to work with JavaScript and SVG, this book is for you.

The book will follow a step-by-step tutorial approach to construct an application that allows video conferencing and calls between two browsers and a system for sharing files among a group. This book is ideal for developers new to the WebRTC standards who are interested in adding sensor-driven, real-time, peer-to-peer communication to their web applications. You will only need basic experience with HTML and JavaScript.

WebRTC Integrator's GuidePackt Publishing Ltd

Unleash the power of XMPP in order to build exciting, real-time, federated applications based on open standards in a secure and highly scalable fashion About This Book Learn about the fundamentals of XMPP and be able to work with the core functionality both server-side and in the browser Build a simple 1-to-1 chat (the "Hello World" of XMPP), explore multi-user chat, publish subscribe systems, and work with a decentralized social network Author Lloyd Watkins is a member of the XMPP standards committee Who This Book Is For If you want to learn about the fundamentals of XMPP, be able to work with the core functionality both server-side and in the browser then this book is for you.No knowledge of XMPP is required, or of TCP/IP networking. It's important that you already know how to build applications of some form, and are looking get a better understanding of how to implement XMPP for one or more of its many uses. You should be interested in the decentralized web, know HTML, and likely know JavaScript and NodeJS. You will probably know JSON, and hopefully XML (this is the native output of XMPP). What You Will Learn Install and configure an XMPP server and use it to connect from a traditional desktop client and send a message Build a simple server-side application that will respond to messages from our logged in desktop client Install and run XMPP-FTW, connect to the server from the browser, and handle incoming/outgoing messages Connect to a multi-user chat room, send/receive stanzas, add a room password, join a protected room, set the room's subject, and change a user's affiliation Get to grips with the publish-subscribe extension of XMPP and use it to build a pusher system that can make any website real-time Build a simple XMPP component and create an extension for XMPP-FTW that allows you to use your own custom format Build an XMPP version of the classic game "Pong" In Detail XMPP (eXtensible Messaging and Presence Protocol) is a messaging protocol that enables communication between two or more devices via the Internet. With this book, developers will learn about the fundamentals of XMPP, be able to work with the core functionality both server-side and in the browser, as well as starting to explore several of the protocol extensions. You will not only have a solid grasp of XMPP and how it works, but will also be able to use the protocol to build real-world applications that utilize the power of XMPP. By the end of this book, you will know more about networking applications in general, and have a good understanding of how to extend XMPP, as well as using it in sample applications. Style and approach Through a number of hands-on projects, this book shows you how to build usable applications that highlights a feature of XMPP.

Deliver rich audio and video real-time communication and peer-to-peer data exchange right in the browser, without the need for proprietary plug-ins. This concise hands-on guide shows you how to use the emerging Web Real-Time Communication (WebRTC) technology to build a browser-to-browser application, piece by piece. The authors' learn-by-example approach is perfect for web programmers looking to understand real-time communication, and telecommunications architects unfamiliar with HTML5 and JavaScript-based client-server web programming. You'll use a ten-step recipe to create a complete WebRTC system, with exercises that you can apply to your own projects. Tour the WebRTC development cycle and trapezoid architectural model Understand how and why VoIP is shifting from standalone functionality to a browser component Use mechanisms that let client-side web apps interact with browsers through the WebRTC API Transfer streaming data between browser peers with the RTCPeerConnection API Create a signaling channel between peers for setting up a WebRTC session Put everything together to create a basic WebRTC system from scratch Learn about conferencing, authorization, and other advanced WebRTC features

Summary Xamarin in Action teaches you to build cross-platform mobile apps using Xamarin and C#. You'll explore all the layers of a Xamarin app, from design to deployment. By the end, you'll be able to build a quality, production-ready Xamarin app on iOS and Android from scratch with a high level of code reuse. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Rewriting the same app for iOS and Android is tedious, error-prone, and expensive. Microsoft's Xamarin drastically reduces dev time by reusing most application code—typically 70% or more. The core of your iOS and Android app is shared; you write platform-specific code only for the UI layer. And because Xamarin uses C#, your apps benefit from everything this modern language and the .NET ecosystem have to offer. About the Book Xamarin in Action teaches you to build cross-platform mobile apps using Xamarin and C#. You'll explore all the layers of a Xamarin app, from design to deployment. Xamarin expert Jim Bennett teaches you design practices that maximize code reuse and isolate device-specific code, making it a snap to incorporate the unique features of each OS. What's Inside Understanding MVVM to maximize code reuse and testability Creating cross-platform model and UI logic layers Building device-specific UIs Unit and automated UI testing Preparing apps for publication with user tracking and crash analytics About the Reader Readers should have some experience with C#. Mobile development experience is helpful, but not assumed. About the Author Jim Bennett is a Xamarin MYP, Microsoft MVP, and Senior Cloud Developer Advocate at Microsoft, specializing in Xamarin mobile apps. He's a frequent speaker at events all around the world, including Xamarin user groups and Xamarin and Microsoft conferences. He regularly blogs about Xamarin development at <https://jimbo Bennett.io>. Table of Contents PART 1 - GETTING STARTED WITH XAMARIN Introducing native cross-platform applications with Xamarin Hello MVVM—creating a simple cross-platform app using MVVM MVVM—the model-view–view model design pattern Hello again, MVVM—understanding and enhancing our simple MVVM app What are we (a)waiting for? An introduction to multithreading for Xamarin apps PART 2 - BUILDING APPS Designing MVVM cross-platform apps Building cross-platform models Building cross-platform view models Building simple Android views Building more advanced Android views Building simple iOS views Building more advanced iOS views PART 3 - FROM WORKING CODE TO THE STORE Running mobile apps on physical devices Testing mobile apps using Xamarin UITest Using App Center to build, test, and monitor apps Deploying apps to beta testers and the stores

Build a robust, high-performance telephony system with FreeSWITCH About This Book Learn how to install and configure a complete telephony system of your own, from scratch, using FreeSWITCH 1.6 Get in-depth discussions of important concepts such as dialplan, user directory, NAT handling, and the powerful FreeSWITCH event socket Discover expert tips from the FreeSWITCH experts, including the creator of FreeSWITCH—Anthony Minessale Who This Book Is For This book is for beginner-level IT professionals and enthusiasts who are interested in quickly getting a powerful telephony system up and running using FreeSWITCH. It would be good if you have some telephony experience, but it's not a must. What You Will Learn Build a complete WebRTC/SIP VoIP platform able to interconnect and process audio and video in real time Use advanced PBX features to create powerful dialplans Understand the inner workings and architecture of FreeSWITCH Real time configuration from database and webserver with mod_xml_curl Integrate browser clients into your telephony service Use scripting to go beyond the dialplan with the power and flexibility of a programming language Secure your FreeSWITCH connections with the help of effective techniques Deploy all FreeSWITCH features using best practices and expert tips Overcome frustrating NAT issues Control FreeSWITCH remotely with the all-powerful event socket Trace packets, check debug logging, ask for community and commercial help In Detail FreeSWITCH is an open source telephony platform designed to facilitate the creation of voice and chat-driven products, scaling from a soft-phone to a PBX and even up to an enterprise-class soft-switch. This book introduces FreeSWITCH to IT professionals who want to build their own telephony system. This book starts with a brief introduction to the latest version of FreeSWITCH. We then move on to the fundamentals and the new features added in version 1.6, showing you how to set up a basic system so you can make and receive phone calls, make calls between extensions, and utilize basic PBX functionality. Once you have a basic system in place, we'll show you how to add more and more functionalities to it. You'll learn to deploy the features on the system using unique techniques and tips to make it work better. Also, there are changes in the security-related components, which will affect the content in the book, so we will make that intact with the latest version. There are new support libraries introduced, such as SQLite, OpenSS, and more, which will make FreeSWITCH more efficient and add more functions to it. We'll cover these in the new edition to make it more appealing for you. Style and approach This easy-to-follow guide helps you understand every topic easily using real-world examples of FreeSWITCH tasks. This book is full of practical code so you get a gradual learning curve.

Go beyond HTML5's Audio tag and boost the audio capabilities of your web application with the Web Audio API. Packed with lots of code examples, crisp descriptions, and useful illustrations, this concise guide shows you how to use this

JavaScript API to make the sounds and music of your games and interactive applications come alive. You need little or no digital audio expertise to get started. Author Boris Smus introduces you to digital audio concepts, then shows you how the Web Audio API solves specific application audio problems. If you're an experienced JavaScript programmer, you'll not only learn how to synthesize and process digital audio, you'll also explore audio analysis and visualization with this API. Learn Web Audio API, including audio graphs and the audio nodes Provide quick feedback to user actions by scheduling sounds with the API's precise timing model Control gain, volume, and loudness, and dive into clipping and crossfading Understand pitch and frequency: use tools to manipulate soundforms directly with JavaScript Generate synthetic sound effects and learn how to spatialize sound in 3D space Use Web Audio API with the Audio tag, getUserMedia, and the Page Visibility API

The book begins by teaching you how to capture audio and video streams from the browser using the Media Capture and Streams API. You will then create your first WebRTC application capable of audio and video calling. The book will also give you in-depth knowledge about signaling and building a signaling server in Node.js. While being introduced to the RTCDataChannel object, you will learn how it relates to WebRTC and how to add text-based chat to your application. You will also learn to take your application further by supporting multiple users through different technologies and scale its performance and security. This book will also cover several theories using full mesh networks, partial mesh networks, and multipoint control units. By the end of this book, you will have an extensive understanding of real-time communication and the WebRTC protocol and APIs.

This book helps to define unified communications strategies, define requirements and select solutions. What others are saying "Unified Communications is one of the main topics that future-oriented companies focus on today. This book offers valuable insight on different strategies and essential criteria when opting for modern Unified Communications solutions", says Konstantin Kruse, Director International Sales, innovaphone AG. Who should read this book The book "Unified Communications - Buyer's Guide" prepares you as a decision-maker, planner or system integrator of solutions or services to define a long-term strategy and selection criteria for systems and services. Business owners: The book gives you hints, what you should consider when you plan to implement modern business communication solutions. You may use the book on your own or give it as a gift to your employees or your business partners. Decision-makers: strategic decisions have to focus on business advantages, use cases, and best practices. Chances for future business opportunities and expanding customer services help to surprise your customers. As a reviewer for another book stated: Defining questions to be asked will help much more and leads to excellent strategic decisions based on fundamental data. The book suggests a lot of questions you may ask your vendor. Planners, consultants: you have to consider impacts of technical choices to the future application and acceptance of the solution. Solutions have to be selected both on commercial, but also technical criteria. The book gives advice how to save money by selecting an individual communications strategy for your business or your client. System integrators: The book's goal is to help you with solution-independent know-how on how to plan and configure solutions to best meet the overall goals of your unified communications project. Vendors and providers: the book informs you about requirements of your (prospective) customers. You may use the book for your own sales, presales or technicians or give it as a gift to your business partners Supporting the book helps you to make your company known. What's inside: The book gives you an overview of Unified Communications tools to improve your business processes. It covers ISDN and Voice over IP technology in a short overview. Different strategies for your enterprise or organization to implement unified communications solutions like on-premise, cloud or mobile centrex solutions are covered. Selection criteria are explained. Defining requirements for different elements and services are a major part of the book. Numerous tips are based on practical experience of various projects. Project examples, a short checklist for your next Unified Communications project and a list of vendor names with links to their website are included. Table of Content: 1. Abstract 2. Index 3. Definition of Terms 4. What is Unified Communication? 5. Traditional PABX Technology 6. Multimedia over IP 7. Conferencing Services 8. Networking Requirements 9. Strategies 10. Implementing Unified Communications 11. Server Strategy 12. Selection Criteria of Servers 13. Selection Criteria of Multimedia Gateways 14. Session Border Controller 15. Selection Criteria for End Devices 16. WebRTC 17. Thin Client Integration 18. DECT 19. Voice over WLAN 20. Fax Services 21. MS SfB / Teams: PSTN and PABX Integration 22. Wide Area Network Services 23. Signalling 24. Coding Technology 25. Licence Fees 26. Vendors and Providers 27. Project Experience 28. Conclusion 29. Acknowledgements 30. Appendix

This book is a step-by-step project-based guide that aims to teach you how to develop your own web applications and services with WebRTC in a concise, practical manner. This book will be perfect for you if you are a WebRTC developer and want to build complex WebRTC applications and projects, or if you want to gain practical experience in developing web applications, advanced WebRTC media handling, server and client signaling, call flows, or third-party integration. It is essential to have prior knowledge of building simple applications using WebRTC.

Flash is fading fast as Canvas continues to climb. The second edition of this popular book gets you started with HTML5 Canvas by showing you how to build interactive multimedia applications. You'll learn how to draw, render text, manipulate images, and create animation—all in the course of building an interactive web game throughout the book. Updated for the latest implementations of Canvas and related HTML5 technologies, this edition includes clear and reusable code examples to help you quickly pick up the basics—whether you currently use Flash, Silverlight, or just HTML and JavaScript. Discover why HTML5 is the future of innovative web development. Create and modify 2D drawings, text, and bitmap images Use algorithms for math-based movement and physics interactions Incorporate and manipulate video, and add audio Build a basic framework for creating a variety of games Use bitmaps and tile sheets to develop animated game graphics Go mobile: build web apps and then modify them for iOS devices Explore ways to use Canvas for 3D and multiplayer game applications

Build powerful cross-platform desktop applications with web technologies such as Node, NW.js, Electron, and React About This Book Build different cross-platform HTML5 desktop applications right from planning, designing, and deployment to enhancement,

testing, and delivery Forget the pain of cross-platform compatibility and build efficient apps that can be easily deployed on different platforms. Build simple to advanced HTML5 desktop apps, by integrating them with other popular frameworks and libraries such as Electron, Node.JS, Nw.js, React, Redux, and TypeScript Who This Book Is For This book has been written for developers interested in creating desktop applications with HTML5. The first part requires essential web-master skills (HTML, CSS, and JavaScript). The second demands minimal experience with React. And finally for the third it would be helpful to have a basic knowledge of React, Redux, and TypeScript. What You Will Learn Plan, design, and develop different cross-platform desktop apps Application architecture with React and local state Application architecture with React and Redux store Code design with TypeScript interfaces and specialized types CSS and component libraries such as Photonkit, Material UI, and React MDL HTML5 APIs such as desktop notifications, WebSockets, WebRTC, and others Desktop environment integration APIs of NW.js and Electron Package and distribute for NW.JS and Electron In Detail Building and maintaining cross-platform desktop applications with native languages isn't a trivial task. Since it's hard to simulate on a foreign platform, packaging and distribution can be quite platform-specific and testing cross-platform apps is pretty complicated. In such scenarios, web technologies such as HTML5 and JavaScript can be your lifesaver. HTML5 desktop applications can be distributed across different platforms (Window, MacOS, and Linux) without any modifications to the code. The book starts with a walk-through on building a simple file explorer from scratch powered by NW.JS. So you will practice the most exciting features of bleeding edge CSS and JavaScript. In addition you will learn to use the desktop environment integration API, source code protection, packaging, and auto-updating with NW.JS. As the second application you will build a chat-system example implemented with Electron and React. While developing the chat app, you will get Photonkit. Next, you will create a screen capturer with NW.JS, React, and Redux. Finally, you will examine an RSS-reader built with TypeScript, React, Redux, and Electron. Generic UI components will be reused from the React MDL library. By the end of the book, you will have built four desktop apps. You will have covered everything from planning, designing, and development to the enhancement, testing, and delivery of these apps. Style and approach Filled with real world examples, this book teaches you to build cross-platform desktop apps right from scratch using a step-by-step approach.

Master the basics of modems, fax, and text telephony technologies, including how modems and faxes work in an IP network infrastructure.

The complete guide to deploying and operating SBC solutions, Including Cisco Unified Border Element (CUBE) Enterprise and service provider networks are increasingly adopting SIP as the guiding protocol for session management, and require leveraging Session Border Controller (SBC) technology to enable this transition. Thousands of organizations have made the Cisco Unified Border Element (CUBE) their SBC technology of choice. Understanding Session Border Controllers gives network professionals and consultants a comprehensive guide to SBC theory, design, deployment, operation, security, troubleshooting, and more. Using CUBE-based examples, the authors offer insights that will be valuable to technical professionals using any SBC solution. The authors thoroughly cover native call control protocols, SBC behavior, and SBC's benefits for topology abstraction, demarcation and security, media, and protocol interworking. They also present practical techniques and configurations for achieving interoperability with a wide variety of collaboration products and solutions. Evaluate key benefits of SBC solutions for security, management, and interoperability Master core concepts of SIP, H.323, DTMF, signaling interoperability, call routing, fax/modem over IP, security, media handling, and media/signal forking in the SBC context Compare SBC deployment scenarios, and optimize deployment for your environment Size and scale an SBC platform for your environment, prevent oversubscription of finite resources, and control cost through careful licensing Use SBCs as a back-to-back user agent (B2BUA) to interoperate between asymmetric VoIP networks Establish SIP trunking for PSTN access via SBCs Interoperate with call servers, proxies, fax servers, ITSPs, redirect servers, call recording servers, contact centers, and other devices Secure real-time communications over IP Mitigate security threats associated with complex SIP deployments Efficiently monitor and manage an SBC environment Design a complete Voice over IP (VoIP) or traditional PBX system with Asterisk, even if you have only basic telecommunications knowledge. This bestselling guide makes it easy with a detailed roadmap that shows you how to install and configure this open source software, whether you're upgrading your existing phone system or starting from scratch. Ideal for Linux administrators, developers, and power users, this updated fifth edition shows you how to write a basic dialplan step-by-step and brings you up to speed on the features in Asterisk 16, the latest long-term support release from Digium. You'll quickly gain working knowledge to build a simple yet inclusive system. Integrate Asterisk with analog, VoIP, and digital telephony systems Build an interactive dialplan using best practices for more advanced features Delve into voicemail options such as storing messages in a database Connect to external services including Google Hangouts, XMPP, and calendars Incorporate Asterisk features and functions into a relational database to facilitate information sharing Learn how to use Asterisk's security, call routing, and faxing features Monitor and control your system with the Asterisk Manager Interface (AMI)

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