Getting Started With Oauth 2 Mcmaster University

Whether you develop web applications or mobile apps, the OAuth 2.0 protocol will save a lot of headaches. This concise introduction shows you how OAuth provides a single authorization technology across numerous APIs on the Web, so you can securely access users' data—such as user profiles, photos, videos, and contact lists—to improve their experience of your application. Through code examples, step-by-step instructions, and use-case examples, you'll learn how to apply OAuth 2.0 to your server-side web application, client-side app, or mobile app. Find out what it takes to access social graphs, store data in a user's online filesystem, and perform many other tasks. Understand OAuth 2.0's role in authentication and authorization Learn how OAuth's Authorization Code flow helps you integrate data from different business applications Discover why native mobile apps use OAuth differently than mobile web apps Use OpenID Connect and eliminate the need to build your own authentication system Getting Started with OAuth 2.0Programming Clients for Secure Web API Authorization and Authentication"O'Reilly Media, Inc."

Learn how to run large-scale, data-intensive workloads with Compute Engine, Google's cloud platform. Written by Google engineers, this tutorial walks you through the details of this Infrastructure as a Service by showing you how to develop a project with it from beginning to end. You'll learn best practices for using Compute Engine, with a focus on solving practical problems. With programming examples written in Python and JavaScript, you'll also learn how to use Compute Engine with Docker containers and other platforms, frameworks, tools, and services. Discover how this IaaS helps you gain unparalleled performance and scalability with Google's advanced storage and computing technologies. Access and manage Compute Engine resources with a web UI, command-line interface, or RESTful interface Configure, customize, and work with Linux VM instances Explore storage options: persistent disk, Cloud Storage, Cloud SQL (MySQL in the cloud), or Cloud Datastore NoSQL service Use multiple private networks, and multiple instances on each network Build, deploy, and test a simple but comprehensive cloud computing application step-by-step Use Compute Engine with Docker, Node.js, ZeroMQ, Web Starter Kit, AngularJS, WebSocket, and D3.js

The OAuth 2.0 authorization framework has become the industry standard in providing secure access to web APIs. It allows users to grant external applications access to their data, such as profile data, photos, and email, without compromising security. OAuth 2.0 Simplified is a guide to building an OAuth 2.0 server. Through high-level overviews, step-by-step instructions, and real-world examples, you will learn how to take advantage of the OAuth 2.0 framework while building a secure API.

Looking for Best Practices for RESTful APIs? This book is for you! Why? Because this book is packed with practical experience on what works best for RESTful API Design. You want to design APIs like a Pro? Use API description languages to both design APIs and develop APIs efficiently. The book introduces the two most common API description languages RAML, OpenAPI, and Swagger. Your company cares about its customers? Learn API product management with a customer-centric design and development approach for APIs. Learn how to manage APIs as a product and how to follow an API-first approach. Build APIs your customers love! You want to manage the complete API lifecycle? An API development methodology is proposed to guide you

through the lifecycle: API inception, API design, API development, API publication, API evolution, and maintenance. You want to build APIs right? This book shows best practices for REST design, such as the correct use of resources, URIs, representations, content types, data formats, parameters, HTTP status codes, and HTTP methods. Your APIs connect to legacy systems? The book shows best practices for connecting APIs to existing backend systems. Your APIs connect to a mesh of microservices? The book shows the principles for designing APIs for scalable, autonomous microservices. You expect lots of traffic on your API? The book shows you how to achieve high performance, availability and maintainability. You want to build APIs that last for decades? We study API versioning, API evolution, backward- and forward-compatibility and show API design patterns for versioning. The API-University Series is a modular series of books on API-related topics. Each book focuses on a particular API topic, so you can select the topics within APIs, which are relevant for you.

Prepare for the next wave of challenges in enterprise security. Learn to better protect, monitor, and manage your public and private APIs. Enterprise APIs have become the common way of exposing business functions to the outside world. Exposing functionality is convenient, but of course comes with a risk of exploitation. This book teaches you about TLS Token Binding, User Managed Access (UMA) 2.0, Cross Origin Resource Sharing (CORS), Incremental Authorization, Proof Key for Code Exchange (PKCE), and Token Exchange. Benefit from lessons learned from analyzing multiple attacks that have taken place by exploiting security vulnerabilities in various OAuth 2.0 implementations. Explore root causes, and improve your security practices to mitigate against similar future exploits. Security must be an integral part of any development project. This book shares best practices in designing APIs for rock-solid security. API security has evolved since the first edition of this book, and the growth of standards has been exponential. OAuth 2.0 is the most widely adopted framework that is used as the foundation for standards, and this book shows you how to apply OAuth 2.0 to your own situation in order to secure and protect your enterprise APIs from exploitation and attack. What You Will Learn Securely design, develop, and deploy enterprise APIs Pick security standards and protocols to match business needs Mitigate security exploits by understanding the OAuth 2.0 threat landscape Federate identities to expand business APIs beyond the corporate firewall Protect microservices at the edge by securing their APIs Develop native mobile applications to access APIs securely Integrate applications with SaaS APIs protected with OAuth 2.0 Who This Book Is For Enterprise security architects who are interested in best practices around designing APIs. The book is also for developers who are building enterprise APIs and integrating with internal and external applications.

Learn how to build a wide range of scalable real-world web applications using a professional development toolkit. If you already know the basics of Node.js, now is the time to discover how to bring it to production level by leveraging its vast ecosystem of packages.With this book, you'll work with a varied collection of standards and frameworks and see how all those pieces fit together. Practical Node.js takes you from installing all the necessary modules to writing full-stack web applications. You'll harness the power of the Express.js and Hapi frameworks, the MongoDB database with Mongoskin and Mongoose. You'll also work with Pug and Handlebars template engines, Stylus and LESS CSS lanaguages, OAuth and Everyauth libraries, and the

Socket.IO and Derby libraries, and everything in between. This exciting second edition is fully updated for ES6/ES2015 and also covers how to deploy to Heroku and AWS, daemonize apps, and write REST APIs. You'll build full-stack real-world Node.js apps from scratch, and also discover how to write your own Node.js modules and publish them on NPM. Fully supported by a continuously updated source code repository on GitHub and with full-color code examples, learn what you can do with Node.js and how far you can take it! What You'll Learn Manipulate data from the mongo console Use the Mongoskin and Mongoose MongoDB libraries Build REST API servers with Express and Hapi Deploy apps to Heroku and AWS Test services with Mocha, Expect and TravisCI Implement a third-party OAuth strategy with Everyauth Web developers who have some familiarity with the basics of Node.js and want to learn how to use it to build apps in a professional environment.

This book offers an introduction to web-API security with OAuth 2.0 and OpenID Connect. In less than 50 pages you will gain an overview of the capabilities of OAuth. You will learn the core concepts of OAuth. You will get to know all four OAuth flows that are used in cloud solutions and mobile apps. If you have tried to read the official OAuth specification, you may get the impression that OAuth is complex. This book explains OAuth in simple terms. The different OAuth flows are visualized graphically using sequence diagrams. The diagrams allow you to see the big picture of the various OAuth interactions. This high-level overview is complemented with rich set of example requests and responses and an explanation of the technical details. In the book the challenges and benefits of OAuth are presented, followed by an explanation of the technical concepts of OAuth. The technical concepts include the actors, endpoints, tokens and the four OAuth flows. Each flow is described in detail, including the use cases for each flow. Extensions of OAuth are presented, such as OpenID Connect and the SAML2 Bearer Profile. Who should read this book? You do not have the time to read long books? This book provides an overview, the core concepts, without getting lost in the small-small details. This book provides all the necessary information to get started with OAuth in less than 50 pages. You believe OAuth is complicated? OAuth may seem complex with flows and redirects going back and forth. This book will give you clarity by introducing the seemingly complicated material by many illustrations. These illustrations clearly show all the involved interaction parties and the messages they exchange. You want to learn the OAuth concepts efficiently? This book uses many illustrations and sequence diagrams. A good diagram says more than 1000 words. You want to learn the difference between OAuth and OpenID Connect? You wonder when the two concepts are used, what they have in common and what is different between them. This book will help you answer this question. You want to use OAuth in your mobile app? If you want to access resources that are protected by OAuth, you need to get a token first, before you can access the resource. For this, you need to understand the OAuth flows and the dependencies between the steps of the flows. You want to use OAuth to protect your APIs? OAuth is perfectly suited to protect your APIs. You can learn which OAuth endpoints need to be provided and which checks need to be made within the protected APIs.

Advanced API Security is a complete reference to the next wave of challenges in enterprise security--securing public and private APIs. API adoption in both consumer and enterprises has gone beyond predictions. It has become the 'coolest' way of exposing business functionalities

to the outside world. Both your public and private APIs, need to be protected, monitored and managed. Security is not an afterthought, but API security has evolved a lot in last five years. The growth of standards, out there, has been exponential. That's where AdvancedAPI Security comes in--to wade through the weeds and help you keep the bad guys away while realizing the internal and external benefits of developing APIs for your services. Our expert author guides you through the maze of options and shares industry leading best practices in designing APIs for rock-solid security. The book will explain, in depth, securing APIs from quite traditional HTTP Basic Authentication to OAuth 2.0 and the standards built around it. Build APIs with rock-solid security today with Advanced API Security. Takes you through the best practices in designing APIs for rock-solid security. Provides an in depth tutorial of most widely adopted security standards for API security. Teaches you how to compare and contrast different security standards/protocols to find out what suits your business needs the best.

Shows how the OAuth 2.0 protocol provides a single authorization for use across different sites on the Internet so that users can access their profiles, photographs, videos, and contact lists anywhere.

Use the full range of features of Dynamics 365 Portal to develop and implement end user portals to provide your audience an online location to communicate and collaborate. This book guides you through implementation and highlights the best practices for each feature. Author Sanjaya Yapa begins with an introduction to end user portals in Dynamics 365 and takes you through a practical example that explains the features in detail. He then teaches you how the portal security works and best practices involved while configuring security such as local and federated authentication, web roles, and access rules. Helpful illustrations and directives guide you in setting up your portal with Dynamics 365 Customer Engagement (CE), basic customizations, content management, and web forms. You learn how to configure and manage document storage and learn about liquid templates, which is important when implementing custom web experiences for your end users. After reading this book, you will be able to implement a portal with Dynamics 365 CE and incorporate best practices in your enterprise-scale solutions. What You Will Learn Set up Dynamics 365 Portal within your Dynamics 365 instance Get familiar with Portal Management Interface and its features Know the security models and how to choose the best option Use Entity Forms, lists, displaying charts, and customize Portal Refer to practical examples and case studies for developing and implementing advanced liquid templates Who This Book Is For Developers working in a Dynamics 365 CE environment

Build an in-depth understanding of the Istio service mesh and see why a service mesh is required for a distributed application. This book covers the Istio architecture and its features using a hands-on approach with language-neutral examples. To get your Istio environment up and running, you will go through its setup and learn the concepts of control plane and data plane. You will become skilled with the new concepts and apply them with best practices to continuously deliver applications. What You Will Learn Discover the Istio architecture components and the Envoy proxy Master traffic management for service routing and application deployment Build application resiliency using timeout, circuit breakers, and connection pools Monitor using Prometheus and Grafana Configure application security Who This Book Is For Developers and project managers who are trying to run their application using Kubernetes. The book is not specific for any programming language even though all examples will be in Java or Python.

Efficiently integrate OAuth 2.0 to protect your mobile, desktop, Cloud applications and APIs using Spring Security technologies. About This Book Interact with public OAuth 2.0 protected APIs such as Facebook, LinkedIn and Google. Use Spring Security and Spring Security OAuth2 to implement your own OAuth 2.0 provider Learn how to implement OAuth 2.0 native mobile clients for Android applications Who This Book Is For This book targets software

engineers and security experts who are looking to develop their skills in API security and OAuth 2.0. Prior programming knowledge and a basic understanding of developing web applications are necessary. As this book's recipes mostly use Spring Security and Spring Security OAuth2, some prior experience with Spring Framework will be helpful. What You Will Learn Use Redis and relational databases to store issued access tokens and refresh tokens Access resources protected by the OAuth2 Provider using Spring Security Implement a web application that dynamically registers itself to the Authorization Server Improve the safety of your mobile client using dynamic client registration Protect your Android client with Proof Key for Code Exchange Protect the Authorization Server from COMPUTERS / Cloud Computing redirection In Detail OAuth 2.0 is a standard protocol for authorization and focuses on client development simplicity while providing specific authorization flows for web applications, desktop applications, mobile phones, and so on. This book also provides useful recipes for solving real-life problems using Spring Security and creating Android applications. The book starts by presenting you how to interact with some public OAuth 2.0 protected APIs such as Facebook, LinkedIn and Google. You will also be able to implement your own OAuth 2.0 provider with Spring Security OAuth2. Next, the book will cover practical scenarios regarding some important OAuth 2.0 profiles such as Dynamic Client Registration, Token Introspection and how to revoke issued access tokens. You will then be introduced to the usage of JWT, OpenID Connect, and how to safely implement native mobile OAuth 2.0 Clients. By the end of this book, you will be able to ensure that both the server and client are protected against common vulnerabilities. Style and approach With the help of real-world examples, this book provides step by step recipes for troubleshooting and extending your API security. The book also helps you with accessing and securing data on mobile, desktop, and cloud apps with OAuth 2.0.

Summary OAuth 2 in Action teaches you the practical use and deployment of this HTTP-based protocol from the perspectives of a client, authorization server, and resource server. You'll learn how to confidently and securely build and deploy OAuth on both the client and server sides. Foreword by Ian Glazer. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Think of OAuth 2 as the web version of a valet key. It is an HTTP-based security protocol that allows users of a service to enable applications to use that service on their behalf without handing over full control. And OAuth is used everywhere, from Facebook and Google, to startups and cloud services. About the Book OAuth 2 in Action teaches you practical use and deployment of OAuth 2 from the perspectives of a client, an authorization server, and a resource server. You'll begin with an overview of OAuth and its components and interactions. Next, you'll get hands-on and build an OAuth client, an authorization server, and a protected resource. Then you'll dig into tokens, dynamic client registration, and more advanced topics. By the end, you'll be able to confidently and securely build and deploy OAuth on both the client and server sides. What's Inside Covers OAuth 2 protocol and design Authorization with OAuth 2 OpenID Connect and User-Managed Access Implementation risks JOSE, introspection, revocation, and registration Protecting and accessing REST APIs About the Reader Readers need basic programming skills and knowledge of HTTP and JSON. About the Author Justin Richer is a systems architect and software engineer. Antonio Sanso is a security software engineer and a security researcher. Both authors contribute to open standards and open source. Table of Contents Part 1 - First steps What is OAuth 2.0 and why should you care? The OAuth dance Part 2 - Building an OAuth 2 environment Building a simple OAuth client Building a simple OAuth protected resource Building a simple OAuth authorization server OAuth 2.0 in the real world Part 3 - OAuth 2 implementation and vulnerabilities Common client vulnerabilities Common protected resources vulnerabilities Common authorization server vulnerabilities Common OAuth token vulnerabilities Part 4 - Taking OAuth further OAuth tokens Dynamic client

registration User authentication with OAuth 2.0 Protocols and profiles using OAuth 2.0 Beyond bearer tokens Summary and conclusions

Looking for the big picture of building APIs? This book is for you! Building APIs that consumers love should certainly be the goal of any API initiative. However, it is easier said than done. It requires getting the architecture for your APIs right. This book equips you with both foundations and best practices for API architecture. This book is for you if you want to understand the big picture of API design and development, you want to define an API architecture, establish a platform for APIs or simply want to build APIs your consumers love. This book is NOT for you, if you are looking for a step-by step guide for building APIs, focusing on every detail of the correct application of REST principles. In this case I recommend the book "API Design" of the API-University Series. What is API architecture? Architecture spans the bigger picture of APIs and can be seen from several perspectives: API architecture may refer to the architecture of the complete solution consisting not only of the API itself, but also of an API client such as a mobile app and several other components. API solution architecture explains the components and their relations within the software solution. API architecture may refer to the technical architecture of the API platform. When building, running and exposing not only one, but several APIs, it becomes clear that certain building blocks of the API, runtime functionality and management functionality for the API need to be used over and over again. An API platform provides an infrastructure for developing, running and managing APIs. API architecture may refer to the architecture of the API portfolio. The API portfolio contains all APIs of the enterprise and needs to be managed like a product. API portfolio architecture analyzes the functionality of the API and organizes, manages and reuses the APIs. API architecture may refer to the design decisions for a particular API proxy. To document the design decisions, API description languages are used. We explain the use of API description languages (RAML and Swagger) on many examples. This book covers all of the above perspectives on API architecture. However, to become useful, the architecture needs to be put into practice. This is why this book covers an API methodology for design and development. An API methodology provides practical guidelines for putting API architecture into practice. It explains how to develop an API architecture into an API that consumers love. A lot of the information on APIs is available on the web. Most of it is published by vendors of API products. I am always a bit suspicious of technical information pushed by product vendors. This book is different. In this book, a product-independent view on API architecture is presented. The API-University Series is a modular series of books on API-related topics. Each book focuses on a particular API topic, so you can select the topics within APIs, which are relevant for you.

A practical, comprehensive, and user-friendly approach to building microservices in Spring About This Book Update existing applications to integrate reactive streams released as a part of Spring 5.0 Learn how to use Docker and Mesos to push the boundaries and build successful microservices Upgrade the capability model to implement scalable microservices Who This Book Is For This book is ideal for Spring developers who want to build cloud-ready, Internet-scale applications, and simple RESTful services to meet modern business demands. What You Will Learn Familiarize yourself with the microservices architecture and its benefits Find out how to avoid common challenges and pitfalls while developing microservices Use Spring Boot and Spring Cloud to develop microservices Handle logging and monitoring microservices Leverage Reactive Programming in Spring 5.0 to build modern cloud native applications Manage internet-scale microservices using Docker, Mesos, and Marathon Gain insights into the latest inclusion of Reactive Streams in Spring and make applications more resilient and scalable In Detail The Spring Framework is an application framework and inversion of the control container for the Java platform. The framework's core features can be used by any Java application, but there are extensions to build web applications on top of the Java EE platform. This book will help you implement the microservice architecture in Spring Framework,

Spring Boot, and Spring Cloud. Written to the latest specifications of Spring that focuses on Reactive Programming, you'll be able to build modern, internet-scale Java applications in no time. The book starts off with guidelines to implement responsive microservices at scale. Next, you will understand how Spring Boot is used to deploy serverless autonomous services by removing the need to have a heavyweight application server. Later, you'll learn how to go further by deploying your microservices to Docker and managing them with Mesos. By the end of the book, you will have gained more clarity on the implementation of microservices using Spring Framework and will be able to use them in internet-scale deployments through real-world examples. Style and approach The book takes a step-by-step approach on developing microservices using Spring Framework, Spring Boot, and a set of Spring Cloud components that will help you scale your applications.

Spring Security in Action shows you how to prevent cross-site scripting and request forgery attacks before they do damage. You'll start with the basics, simulating password upgrades and adding multiple types of authorization. As your skills grow, you'll adapt Spring Security to new architectures and create advanced OAuth2 configurations. By the time you're done, you'll have a customized Spring Security configuration that protects against threats both common and extraordinary. Summary While creating secure applications is critically important, it can also be tedious and time-consuming to stitch together the required collection of tools. For Java developers, the powerful Spring Security framework makes it easy for you to bake security into your software from the very beginning. Filled with code samples and practical examples, Spring Security in Action teaches you how to secure your apps from the most common threats, ranging from injection attacks to lackluster monitoring. In it, you'll learn how to manage system users, configure secure endpoints, and use OAuth2 and OpenID Connect for authentication and authorization. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Security is non-negotiable. You rely on Spring applications to transmit data, verify credentials, and prevent attacks. Adopting "secure by design" principles will protect your network from data theft and unauthorized intrusions. About the book Spring Security in Action shows you how to prevent cross-site scripting and request forgery attacks before they do damage. You'll start with the basics, simulating password upgrades and adding multiple types of authorization. As your skills grow, you'll adapt Spring Security to new architectures and create advanced OAuth2 configurations. By the time you're done, you'll have a customized Spring Security configuration that protects against threats both common and extraordinary. What's inside Encoding passwords and authenticating users Securing endpoints Automating security testing Setting up a standalone authorization server About the reader For experienced Java and Spring developers. About the author Laurentiu Spilca is a dedicated development lead and trainer at Endava, with over ten years of Java experience. Table of Contents PART 1 - FIRST STEPS 1 Security Today 2 Hello Spring Security PART 2 - IMPLEMENTATION 3 Managing users 4 Dealing with passwords 5 Implementing authentication 6 Hands-on: A small secured web application 7 Configuring authorization: Restricting access 8 Configuring authorization: Applying restrictions 9 Implementing filters 10 Applying CSRF protection and CORS 11 Hands-on: A separation of responsibilities 12 How does OAuth 2 work? 13 OAuth 2: Implementing the authorization server 14 OAuth 2: Implementing the resource server 15 OAuth 2: Using JWT and cryptographic signatures 16 Global method security: Pre- and

postauthorizations 17 Global method security: Pre- and postfiltering 18 Hands-on: An OAuth 2 application 19 Spring Security for reactive apps 20 Spring Security testing
Learn to leverage the advanced capabilities of Keycloak, an open-source identity and access management solution, to enable authentication and authorization in applications Key Features Get up to speed with Keycloak, OAuth 2.0, and OpenID Connect using practical examples Configure, manage, and extend Keycloak for optimized security Leverage Keycloak features to secure different application types Book Description Implementing authentication and authorization for applications can be a daunting experience, often leaving them exposed to security vulnerabilities. Keycloak is an open-source solution for identity management and access management for modern applications. Keycloak - Identity and Access Management for Modern Applications is a comprehensive introduction to Keycloak, helping you get started with using it and securing your applications. Complete with hands-on tutorials, best practices, and self-assessment questions, this easy-to-follow guide will show you how to secure a sample application and then move on to securing different application types. As you progress, you will understand how to configure and manage Keycloak as well as how to leverage some of its more advanced capabilities. Finally, you'll gain insights into securely using Keycloak in production. By the end of this book, you will have learned how to install and manage Keycloak as well as how to secure new and existing applications. What you will learn Understand how to install, configure, and manage Keycloak Secure your new and existing applications with Keycloak Gain a basic understanding of OAuth 2.0 and OpenID Connect Understand how to configure Keycloak to make it ready for production use Discover how to leverage additional features and how to customize Keycloak to fit your needs Get to grips with securing Keycloak servers and protecting applications Who this book is for Developers, sysadmins, security engineers, or anyone who wants to leverage Keycloak and its capabilities for application security will find this book useful. Beginner-level knowledge of app development and authentication and authorization is expected.
Jump in and build working Android apps with the help of more than 230 tested recipes. The second edition of this acclaimed cookbook includes recipes for working with user interfaces, multitouch gestures, location awareness, web services, and specific device features such as the phone, camera, and accelerometer. You also get useful info on packaging your app for the Google Play Market. Ideal for developers familiar with Java, Android basics, and the Java SE API, this book features recipes contributed by more than three dozen Android developers. Each recipe provides a clear solution and sample code you can use in your project right away. Among numerous topics, this cookbook helps you: Get started with the tooling you need for developing and testing Android apps Create layouts with Android’s UI controls, graphical services, and pop-up mechanisms Build location-aware services on Google Maps and OpenStreetMap Control aspects of Android’s music, video, and other multimedia capabilities Work with accelerometers and other Android sensors Use various gaming and animation frameworks Store and retrieve persistent data in files and embedded databases Access RESTful web services with JSON and other formats Test and troubleshoot individual components and your entire application
Metadata research has emerged as a discipline cross-cutting many domains, focused on the provision of distributed descriptions (often called annotations) to Web resources

or applications. Such associated descriptions are supposed to serve as a foundation for advanced services in many application areas, including search and location, personalization, federation of repositories and automated delivery of information. Indeed, the Semantic Web is in itself a concrete technological framework for ontology-based metadata. For example, Web-based social networking requires metadata describing people and their interrelations, and large databases with biological information use complex and detailed metadata schemas for more precise and informed search strategies.There is a wide diversity in the languages and idioms used for providing meta-descriptions, from simple structured text in metadata schemas to formal annotations using ontologies, and the technologies for storing, sharing and exploiting meta-descriptions are also diverse and evolve rapidly. In addition, there is a proliferation of schemas and standards related to metadata, resulting in a complex and moving technological landscape — hence, the need for specialized knowledge and skills in this area.The Handbook of Metadata, Semantics and Ontologies is intended as an authoritative reference for students, practitioners and researchers, serving as a roadmap for the variety of metadata schemas and ontologies available in a number of key domain areas, including culture, biology, education, healthcare, engineering and library science.

API Security in Action teaches you how to create secure APIs for any situation. By following this hands-on guide you'll build a social network API while mastering techniques for flexible multi-user security, cloud key management, and lightweight cryptography. Summary A web API is an efficient way to communicate with an application or service. However, this convenience opens your systems to new security risks. API Security in Action gives you the skills to build strong, safe APIs you can confidently expose to the world. Inside, you'll learn to construct secure and scalable REST APIs, deliver machine-to-machine interaction in a microservices architecture, and provide protection in resource-constrained IoT (Internet of Things) environments. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology APIs control data sharing in every service, server, data store, and web client. Modern data-centric designs—including microservices and cloud-native applications—demand a comprehensive, multi-layered approach to security for both private and public-facing APIs. About the book API Security in Action teaches you how to create secure APIs for any situation. By following this hands-on guide you'll build a social network API while mastering techniques for flexible multi-user security, cloud key management, and lightweight cryptography. When you're done, you'll be able to create APIs that stand up to complex threat models and hostile environments. What's inside Authentication Authorization Audit logging Rate limiting Encryption About the reader For developers with experience building RESTful APIs. Examples are in Java. About the author Neil Madden has in-depth knowledge of applied cryptography, application security, and current API security technologies. He holds a Ph.D. in Computer Science. Table of Contents PART 1 - FOUNDATIONS 1 What is API security? 2 Secure API development 3 Securing the Natter API PART 2 - TOKEN-BASED AUTHENTICATION 4 Session cookie authentication 5 Modern token-based authentication 6 Self-contained tokens and JWTs PART 3 - AUTHORIZATION 7 OAuth2 and OpenID Connect 8 Identity-based access control 9 Capability-based security and macaroons PART 4 - MICROSERVICE APIs IN

KUBERNETES 10 Microservice APIs in Kubernetes 11 Securing service-to-service APIs PART 5 - APIs FOR THE INTERNET OF THINGS 12 Securing IoT communications 13 Securing IoT APIs

Create powerful applications to interact with popular service providers such as Facebook, Google, Twitter, and more by leveraging the OAuth 2.0 Authorization Framework About This Book Learn how to use the OAuth 2.0 protocol to interact with the world's most popular service providers, such as Facebook, Google, Instagram, Slack, Box, and more Master the finer details of this complex protocol to maximize the potential of your application while maintaining the utmost of security Step through the construction of a real-world working application that logs you in with your Facebook account to create a compelling infographic about the most important person in the world—you! Who This Book Is For If you are an application developer, software architect, security engineer, or even a casual programmer looking to leverage the power of OAuth, Mastering OAuth 2.0 is for you. Covering basic topics such as registering your application and choosing an appropriate workflow, to advanced topics such as security considerations and extensions to the specification, this book has something for everyone. A basic knowledge of programming and OAuth is recommended. What You Will Learn Discover the power and prevalence of OAuth 2.0 and use it to improve your application's capabilities Step through the process of creating a real-world application that interacts with Facebook using OAuth 2.0 Examine the various workflows described by the specification, looking at what they are and when to use them Learn about the many security considerations involved with creating an application that interacts with other service providers Develop your debugging skills with dedicated pages for tooling and troubleshooting Build your own rich, powerful applications by leveraging world-class technologies from companies around the world In Detail OAuth 2.0 is a powerful authentication and authorization framework that has been adopted as a standard in the technical community. Proper use of this protocol will enable your application to interact with the world's most popular service providers, allowing you to leverage their world-class technologies in your own application. Want to log your user in to your application with their Facebook account? Want to display an interactive Google Map in your application? How about posting an update to your user's LinkedIn feed? This is all achievable through the power of OAuth. With a focus on practicality and security, this book takes a detailed and hands-on approach to explaining the protocol, highlighting important pieces of information along the way. At the beginning, you will learn what OAuth is, how it works at a high level, and the steps involved in creating an application. After obtaining an overview of OAuth, you will move on to the second part of the book where you will learn the need for and importance of registering your application and types of supported workflows. You will discover more about the access token, how you can use it with your application, and how to refresh it after expiration. By the end of the book, you will know how to make your application architecture robust. You will explore the security considerations and effective methods to debug your applications using appropriate tools. You will also have a look at special considerations to integrate with OAuth service providers via native mobile applications. In addition, you will also come across support resources for OAuth and credentials grant. Style and approach With a focus on practicality and security, Mastering OAuth 2.0 takes a top-down approach at exploring the protocol. Discussed first at a high level,

examining the importance and overall structure of the protocol, the book then dives into each subject, adding more depth as we proceed. This all culminates in an example application that will be built, step by step, using the valuable and practical knowledge you have gained.

Architect and design highly scalable, robust, clean and highly performant applications in .NET Core About This Book Incorporate architectural soft-skills such as DevOps and Agile methodologies to enhance program-level objectives Gain knowledge of architectural approaches on the likes of SOA architecture and microservices to provide traceability and rationale for architectural decisions Explore a variety of practical use cases and code examples to implement the tools and techniques described in the book Who This Book Is For This book is for experienced .NET developers who are aspiring to become architects of enterprise-grade applications, as well as software architects who would like to leverage .NET to create effective blueprints of applications. What You Will Learn Grasp the important aspects and best practices of application lifecycle management Leverage the popular ALM tools, application insights, and their usage to monitor performance, testability, and optimization tools in an enterprise Explore various authentication models such as social media-based authentication, 2FA and OpenID Connect, learn authorization techniques Explore Azure with various solution approaches for Microservices and Serverless architecture along with Docker containers Gain knowledge about the recent market trends and practices and how they can be achieved with .NET Core and Microsoft tools and technologies In Detail If you want to design and develop enterprise applications using .NET Core as the development framework and learn about industry-wide best practices and guidelines, then this book is for you. The book starts with a brief introduction to enterprise architecture, which will help you to understand what enterprise architecture is and what the key components are. It will then teach you about the types of patterns and the principles of software development, and explain the various aspects of distributed computing to keep your applications effective and scalable. These chapters act as a catalyst to start the practical implementation, and design and develop applications using different architectural approaches, such as layered architecture, service oriented architecture, microservices and cloud-specific solutions. Gradually, you will learn about the different approaches and models of the Security framework and explore various authentication models and authorization techniques, such as social media-based authentication and safe storage using app secrets. By the end of the book, you will get to know the concepts and usage of the emerging fields, such as DevOps, BigData, architectural practices, and Artificial Intelligence. Style and approach Filled with examples and use cases, this guide takes a no-nonsense approach to show you the best tools and techniques required to become a successful software architect.

This is a practical and fast-paced guide that gives you all the information you need to start implementing secure OAuth 2.0 implementations in your web applications.OAuth 2.0 Identity and Access Management Patterns is intended for software developers, software architects, and enthusiasts working with the OAuth 2.0 framework. In order to learn and understand the OAuth 2.0 grant flow, it is assumed that you have some basic knowledge of HTTP communication. For the practical examples, basic knowledge of HTML templating, programming languages, and executing commands in the command line terminal is assumed.

Master core REST concepts and create RESTful web services in Java About This Book Build efficient and secure RESTful web APIs in Java.. Design solutions to produce, consume and visualize RESTful web services using WADL, RAML, and Swagger Familiarize the role of RESTful APIs usage in emerging technology trends like Cloud, IoT, Social Media. Who This Book Is For If you are a web developer with a basic understanding of the REST concepts and envisage to get acquainted with the idea of designing and developing RESTful web services, this is the book for you. As all the code samples for the book are written in Java, proficiency in Java is a must. What You Will Learn Introduce yourself to the RESTful software architectural style and the REST API design principles Make use of the JSR 353 API, JSR 374 API, JSR 367 API and Jackson API for JSON processing Build portable RESTful web APIs, making use of the JAX-RS 2.1 API Simplify API development using the Jersey and RESTEasy extension APIs Secure your RESTful web services with various authentication and authorization mechanisms Get to grips with the various metadata solutions to describe, produce, and consume RESTful web services Understand the design and coding guidelines to build well-performing RESTful APIs See how the role of RESTful web services changes with emerging technologies and trends In Detail Representational State Transfer (REST) is a simple yet powerful software architecture style to create lightweight and scalable web services. The RESTful web services use HTTP as the transport protocol and can use any message formats, including XML, JSON(widely used), CSV, and many more, which makes it easily inter-operable across different languages and platforms. This successful book is currently in its 3rd edition and has been used by thousands of developers. It serves as an excellent guide for developing RESTful web services in Java. This book attempts to familiarize the reader with the concepts of REST. It is a pragmatic guide for designing and developing web services using Java APIs for real-life use cases following best practices and for learning to secure REST APIs using OAuth and JWT. Finally, you will learn the role of RESTful web services for future technological advances, be it cloud, IoT or social media. By the end of this book, you will be able to efficiently build robust, scalable, and secure RESTful web services using Java APIs. Style and approach Step-by-step guide to designing and developing robust RESTful web services. Each topic is explained in a simple and easy-to-understand manner with lots of real-life use-cases and their solutions.

Learn How to Use Swift on the Server! Server Side Swift with Vapor introduces you to the world of server development with the added bonus of using Swift. You'll learn how to build APIs, web sites, databases, application servers and use off site hosting solutions such as Heroku and AWS. You'll use many of Vapor's modules such as Fluent, Vapor's ORM, and Leaf, the templating engine for building web pages. Who This Book Is For This book is for iOS developers who already know the basics of iOS and Swift development and want to transfer that knowledge to writing server based applications. Topics Covered in Server Side Swift with Vapor: - HTTP: Learn the basics of how to make requests to and from servers. - Fluent: Learn how to use Fluent to save and manage your models in databases. - Controllers: Learn how to use controllers to route your requests and responses. - Leaf: Learn how Vapor's Leaf module and its templating language allow you to build dynamic web sites directly. - Middleware: Learn how built-in Vapor modules can assist with common tasks such as validating users, settings required response headers, serving static files and more. One thing you can count on: After reading this book, you'll be prepared to write your own server-side applications using Vapor and, of course, Swift

Written by the core development team of JHipster and fully updated for JHipster 6, Java 11, and Spring Boot 2.1, this book will show you how to build modern web applications with real-world examples and best practices Key Features Build full stack applications with modern JavaScript frameworks such as Angular, React, and Vue.js Explore the JHipster microservices stack, which includes Spring Cloud, Netflix OSS, and the Elastic Stack Learn advanced local

and cloud deployment strategies using Docker and Kubernetes Book Description JHipster is an open source development platform that allows you to easily create web apps and microservices from scratch without spending time on wiring and integrating different technologies. Updated to include JHipster 6, Java 11, Spring Boot 2.1, Vue.js, and Istio, this second edition of Full Stack Development with JHipster will help you build full stack applications and microservices seamlessly. You'll start by understanding JHipster and its associated tools, along with the essentials of full stack development, before building a monolithic web app. You'll then learn the JHipster Domain Language (JDL) with entity modeling using JDL-Studio. With this book, you'll create production-ready web apps using Spring Boot, Spring Framework, Angular, and Bootstrap, and run tests and set up continuous integration pipelines with Jenkins. As you advance, you'll learn how to convert your monoliths to microservices and how to package your application for production with various deployment options, including Heroku and Google Cloud. You'll also learn about Docker and Kubernetes, along with an introduction to the Istio service mesh. Finally, you'll build your client-side with React and Vue.js and discover JHipster's best practices. By the end of the book, you'll be able to leverage the best tools available to build modern web apps. What you will learn Create full stack apps from scratch using the latest features of JHipster 6 and Spring Boot 2.1 Build business logic by creating and developing entity models using JDL Understand how to convert a monolithic architecture into a full-fledged microservices architecture Build and package your apps for production using Docker Deploy your application to Google Cloud with Kubernetes Create continuous integration/continuous delivery pipelines with Jenkins Create applications using Angular, React, and Vue.js client-side frameworks Who this book is for This book is for full stack developers who want to build web applications and microservices speedily without writing a lot of boilerplate code. If you’re a backend developer looking to learn full stack development with JavaScript frameworks and libraries such as Angular, React, and Vue.js, you’ll find this book useful. Experience in building Java web applications is required. Some exposure to the Spring Framework would be beneficial but not necessary to get the most out of this book.

Do you want to know how OpenID Connect works? This book is for you! Exploring how OpenID Connect works in detail is the subject of this book. We take a bottom-up approach and first study all the elements (actors, endpoints, and tokens) of OpenID Connect. This puts us in an excellent position for the second step: to understand the various OpenID Connect Flows - how the actors, endpoints, and tokens are put together to transmit identity claims securely. Do you wonder why there are several OpenID Connect Flows? Whether we use OpenID Connect from a mobile app, a script in a browser or from a secure backend server, there is an appropriate OpenID Connect Flow with the right tradeoffs in security, functionality, and convenience for each of these scenarios. This book helps you to choose the right one. Do you think that these OpenID Connect Flows are confusing? You are not alone; the OpenID Connect Flows tend to get confusing. However, with this book, we make it clear and easy to understand: We visualize these flows and show how to choose the flow that is appropriate for a given scenario. A picture says more than a 1000 words - that is why we explain the OpenID Connect Flows using easy to understand sequence diagrams. Do you want to understand how JWT works? This book explains what a JSON Web Token (JWT) is, how it is used in OpenID Connect, how it is constructed, what data it contains, how to read it, and how to protect its contents. Do you wonder why there are so many tokens in OpenID Connect and how to use them? There are JWT, JWS, JWE, access tokens, refresh tokens, identity tokens, and authorization codes. This book helps you to make sense of them all. Using examples, we explore how the tokens are used, constructed, signed, and encrypted. Why is OpenID Connect so popular? If used in the right way, OpenID Connect is powerful, and everyone loves it: End-users don't need to signup and remember a new password Business owners enjoy high

conversion rates Developers don't get any grey hair over securely storing credentials Do you want to increase the conversion rate of your app? Signup and login to a new app become so smooth and convenient that end-users are much more likely to try a new app. It is supported, e.g. by Google, Yahoo, or Microsoft. Would you like to manage no credentials but still have authenticated users? For us developers of web and mobile apps, these signup and login features are attractive, too: we do not need to manage user credentials, and we get a higher conversion rate resulting in more new customers. In effect, this means cutting costs and increasing the number of new customers for our apps. Which programming language do you use in the book? This is not a programming book, don't expect implementations with a specific programming language or library. Instead, we focus on understanding OpenID Connect on a conceptual level, so we can design and architect apps that work with OpenID Connect. And OpenID Connect is the standard behind creating smooth login and signup experiences, increasing the customer signup rate, and creating highly converting apps.

Choose the smarter way to learn about containerizing your applications and running them in production. Key Features Deploy and manage highly scalable, containerized applications with Kubernetes Build high-availability Kubernetes clusters Secure your applications via encapsulation, networks, and secrets Book Description Kubernetes is an open source orchestration platform for managing containers in a cluster environment. This Learning Path introduces you to the world of containerization, in addition to providing you with an overview of Docker fundamentals. As you progress, you will be able to understand how Kubernetes works with containers. Starting with creating Kubernetes clusters and running applications with proper authentication and authorization, you'll learn how to create high-availability Kubernetes clusters on Amazon Web Services (AWS), and also learn how to use kubeconfig to manage different clusters. Whether it is learning about Docker containers and Docker Compose, or building a continuous delivery pipeline for your application, this Learning Path will equip you with all the right tools and techniques to get started with containerization. By the end of this Learning Path, you will have gained hands-on experience of working with Docker containers and orchestrators, including SwarmKit and Kubernetes. This Learning Path includes content from the following Packt products: Kubernetes Cookbook - Second Edition by Hideto Saito, Hui-Chuan Chloe Lee, and Ke-Jou Carol Hsu Learn Docker - Fundamentals of Docker 18.x by Gabriel N. Schenker What you will learn Build your own container cluster Run a highly distributed application with Docker Swarm or Kubernetes Update or rollback a distributed application with zero downtime Containerize your traditional or microservice-based application Build a continuous delivery pipeline for your application Track metrics and logs for every container in your cluster Implement container orchestration to streamline deploying and managing applications Who this book is for This beginner-level Learning Path is designed for system administrators, operations engineers, DevOps engineers, and developers who want to get started with Docker and Kubernetes. Although no prior experience with Docker is required, basic knowledge of Kubernetes and containers will be helpful.

Developers, designers, engineers, and creators can no longer afford to pass responsibility for identity and data security onto others. Web developers who don’t understand how to obscure data in transmission, for instance, can open security flaws on a site without realizing it. With this practical guide, you’ll learn how and why everyone working on a system needs to ensure that users and data are protected. Authors Jonathan LeBlanc and Tim Messerschmidt provide a deep dive into the concepts, technology, and programming methodologies necessary to build a secure interface for data and identity—without compromising usability. You’ll learn how to plug holes in existing systems, protect against viable attack vectors, and work in environments that sometimes are naturally insecure. Understand the state of web and application security today Design security password encryption, and combat password attack vectors Create digital fingerprints to identify users through browser, device, and paired device detection Build secure

data transmission systems through OAuth and OpenID Connect Use alternate methods of identification for a second factor of authentication Harden your web applications against attack Create a secure data transmission system using SSL/TLS, and synchronous and asynchronous cryptography

This book gets you a running start with serverless GraphQL APIs on Amazon's AWS AppSync. Whether you are new to GraphQL, or you are an experienced GraphQL developer, this book will provide you with the knowledge needed to get started with AWS AppSync. Do you like learning by doing? After quickly covering the GraphQL foundations, you will dive into the practice of developing APIs with AWS AppSync with in-depth walkthroughs, screenshots, and code samples. Do I learn everything I need to get started? The book guides you through the step-by-step process of designing GraphQL APIs: creating a GraphQL schema, developing GraphQL APIs, connecting data sources, developing resolvers with AppSync templates, securing your API, offering real-time data, developing offline support and synchronization for your apps and much more. Why GraphQL? GraphQL is now a viable option for modern API design. And since Facebook, Yelp, and Shopify have built successful APIs with GraphQL, many companies consider following in the technological footsteps of these tech giants. Using GraphQL is great, but by itself, it is only half the rent: It requires the manual installation and maintenance of software infrastructure components. Why Serverless GraphQL with AppSync? AppSync is a cloud-based platform for GraphQL APIs. It is serverless, so you waste no time setting up infrastructure. It scales up and down dynamically depending on the load. It supports your app developers with an SDK for synchronization and offline support. You pay only what you use, so no upfront investment is needed and it may save your organizations thousands of dollars in IT costs.

Got RESTful APIs? Great. API consumers love them. But today, such RESTful APIs are not enough for the evolving expectations of API consumers. Their apps need to be responsive, event-based and react to changes in near real-time. This results in a new set of requirements for the APIs, which power the apps. APIs now need to provide concepts such as events, notifications, triggers, and subscriptions. These concepts are not natively supported by the REST architectural style. In thios book we show how to engineer RESTful APIs that support events with a webhook infrastructure. What are the alternatives to webhooks? We study several approaches for realizing events, such as Polling, Long Polling, Webhooks, HTTP Streaming, Server-Sent Events, WebSockets, WebSub and GraphQL Subscriptions. All of these approaches have their advantages and disadvantages. Can webhooks communicate in real-time? We study the non-functional requirements of a webhooks infrastructure, in areas such as security, reliability and developer experience. How do well-known API providers design webhooks? We examine the webhook infrastructure provided by GitHub, BitBucket, Stripe, Slack, and Intercom. With the best practices, case studies, and design templates provided in this book, we want to help you extend your API portfolio with a modern webhook infrastructure. So you can offer both APIs and events that developers love to use.

”A complete guide to the challenges and solutions in securing microservices architectures.” —Massimo Siani, FinDynamic Key Features Secure microservices infrastructure and code Monitoring, access control, and microservice-to-microservice communications Deploy securely using Kubernetes, Docker, and the Istio service mesh. Hands-on examples and exercises using Java and Spring Boot Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. Microservices Security in Action teaches you how to address microservices-specific security challenges throughout the system. This practical guide includes plentiful hands-on exercises using industry-

leading open-source tools and examples using Java and Spring Boot. About The Book Design and implement security into your microservices from the start. Microservices Security in Action teaches you to assess and address security challenges at every level of a Microservices application, from APIs to infrastructure. You'll find effective solutions to common security problems, including throttling and monitoring, access control at the API gateway, and microservice-to-microservice communication. Detailed Java code samples, exercises, and real-world business use cases ensure you can put what you've learned into action immediately. What You Will Learn Microservice security concepts Edge services with an API gateway Deployments with Docker, Kubernetes, and Istio Security testing at the code level Communications with HTTP, gRPC, and Kafka This Book Is Written For For experienced microservices developers with intermediate Java skills. About The Author Prabath Siriwardena is the vice president of security architecture at WSO2. Nuwan Dias is the director of API architecture at WSO2. They have designed secure systems for many Fortune 500 companies. Table of Contents PART 1 OVERVIEW 1 Microservices security landscape 2 First steps in securing microservices PART 2 EDGE SECURITY 3 Securing north/south traffic with an API gateway 4 Accessing a secured microservice via a single-page application 5 Engaging throttling, monitoring, and access control PART 3 SERVICE-TO-SERVICE COMMUNICATIONS 6 Securing east/west traffic with certificates 7 Securing east/west traffic with JWT 8 Securing east/west traffic over gRPC 9 Securing reactive microservices PART 4 SECURE DEPLOYMENT 10 Conquering container security with Docker 11 Securing microservices on Kubernetes 12 Securing microservices with Istio service mesh PART 5 SECURE DEVELOPMENT 13 Secure coding practices and automation

Know how to design and use identity management to protect your application and the data it manages. At a time when security breaches result in increasingly onerous penalties, it is paramount that application developers and owners understand identity management and the value it provides when building applications. This book takes you from account provisioning to authentication to authorization, and covers troubleshooting and common problems to avoid. The authors include predictions about why this will be even more important in the future. Application best practices with coding samples are provided. Solving Identity and Access Management in Modern Applications gives you what you need to design identity and access management for your applications and to describe it to stakeholders with confidence. You will be able to explain account creation, session and access management, account termination, and more. What You'll Learn Understand key identity management concepts Incorporate essential design principles Design authentication and access control for a modern application Know the identity management frameworks and protocols used today (OIDC/ OAuth 2.0, SAML 2.0) Review historical failures and know how to avoid them Who This Book Is For Developers, enterprise or application

architects, business application or product owners, and anyone involved in an application's identity management solution

Believe it or not, building an API is the easy part. What is far more challenging is to put together a design that will stand the test of time, while also meeting your developers' needs. After all, no matter how well written your code may be, without a strong foundation, you will find your API quickly failing. Undisturbed REST works to tackle this issue through the use of modern design techniques and technology, showing how to carefully design your API with your users and longevity in-mind, taking advantage of a design-first approach- while incorporating best practices and hard lessons learned. After reading Undisturbed REST, you'll have a strong understanding of APIs, best practices, and available tooling for designing, prototyping, sharing, documenting, and generating tooling (such as SDKs) around your API. More importantly, you'll be equipped to design and build an API not just for today, but one that can stand the test of time and lead your application into tomorrow.

Build advanced authentication solutions for any cloud or web environment Active Directory has been transformed to reflect the cloud revolution, modern protocols, and today’s newest SaaS paradigms. This is an authoritative, deep-dive guide to building Active Directory authentication solutions for these new environments. Author Vittorio Bertocci drove these technologies from initial concept to general availability, playing key roles in everything from technical design to documentation. In this book, he delivers comprehensive guidance for building complete solutions. For each app type, Bertocci presents high-level scenarios and quick implementation steps, illuminates key concepts in greater depth, and helps you refine your solution to improve performance and reliability. He helps you make sense of highly abstract architectural diagrams and nitty-gritty protocol and implementation details. This is the book for people motivated to become experts. Active Directory Program Manager Vittorio Bertocci shows you how to: Address authentication challenges in the cloud or on-premises Systematically protect apps with Azure AD and AD Federation Services Power sign-in flows with OpenID Connect, Azure AD, and AD libraries Make the most of OpenID Connect’s middleware and supporting classes Work with the Azure AD representation of apps and their relationships Provide fine-grained app access control via roles, groups, and permissions Consume and expose Web APIs protected by Azure AD Understand new authentication protocols without reading complex spec documents

The popularity of REST in recent years has led to tremendous growth in almost-RESTful APIs that don’t include many of the architecture’s benefits. With this practical guide, you’ll learn what it takes to design usable REST APIs that evolve over time. By focusing on solutions that cross a variety of domains, this book shows you how to create powerful and secure applications, using the tools designed for the world’s most successful distributed computing system: the World Wide Web. You’ll explore the concepts behind REST, learn different

strategies for creating hypermedia-based APIs, and then put everything together with a step-by-step guide to designing a RESTful Web API. Examine API design strategies, including the collection pattern and pure hypermedia Understand how hypermedia ties representations together into a coherent API Discover how XMDP and ALPS profile formats can help you meet the Web API "semantic challenge" Learn close to two-dozen standardized hypermedia data formats Apply best practices for using HTTP in API implementations Create Web APIs with the JSON-LD standard and other the Linked Data approaches Understand the CoAP protocol for using REST in embedded systems

Build real-world, production-ready solutions in Go using cutting-edge technology and techniques About This Book Get up to date with Go and write code capable of delivering massive world-class scale performance and availability Learn to apply the nuances of the Go language, and get to know the open source community that surrounds it to implement a wide range of start-up quality projects Write interesting and clever but simple code, and learn skills and techniques that are directly transferrable to your own projects Who This Book Is For If you are familiar with Go and are want to put your knowledge to work, then this is the book for you. Go programming knowledge is a must. What You Will Learn Build quirky and fun projects from scratch while exploring patterns, practices, and techniques, as well as a range of different technologies Create websites and data services capable of massive scale using Go's net/http package, exploring RESTful patterns as well as low-latency WebSocket APIs Interact with a variety of remote web services to consume capabilities ranging from authentication and authorization to a fully functioning thesaurus Develop high-quality command-line tools that utilize the powerful shell capabilities and perform well using Go's in-built concurrency mechanisms Build microservices for larger organizations using the Go Kit library Implement a modern document database as well as high-throughput messaging queue technology to put together an architecture that is truly ready to scale Write concurrent programs and gracefully manage the execution of them and communication by smartly using channels Get a feel for app deployment using Docker and Google App Engine In Detail Go is the language of the Internet age, and the latest version of Go comes with major architectural changes. Implementation of the language, runtime, and libraries has changed significantly. The compiler and runtime are now written entirely in Go. The garbage collector is now concurrent and provides dramatically lower pause times by running in parallel with other Go routines when possible. This book will show you how to leverage all the latest features and much more. This book shows you how to build powerful systems and drops you into real-world situations. You will learn to develop high-quality command-line tools that utilize the powerful shell capabilities and perform well using Go's in-built concurrency mechanisms. Scale, performance, and high availability lie at the heart of our projects, and the lessons learned throughout this book will arm you with everything you need to build world-class solutions. You will get a feel for app

deployment using Docker and Google App Engine. Each project could form the basis of a start-up, which means they are directly applicable to modern software markets. Style and approach This book provides fun projects that involve building applications from scratch. These projects will teach you to build chat applications, a distributed system, and a recommendation system.

IBM® API Connect is an API management solution from IBM that offers capabilities to create, run, manage, and secure APIs and microservices. By using these capabilities, the full lifecycle of APIs for on-premises and cloud environments can be managed. This IBM RedpaperTM publication describes practical scenarios that show the API Connect capabilities for managing the full API life cycle, creating, running, securing, and managing the APIs. This Redpaper publication is targeted to users of an API Connect based API strategy, developers, IT architects, and technical evangelists. If you are not familiar with APIs or API Connect, we suggest that you read the Redpaper publication Getting Started with IBM API Connect: Concepts, Architecture and Strategy Guide, REDP-5349, before reading this publication.