

Oauth 2 0 Securing Apis Le And Beyond Netiq

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

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.

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.

Unpack your API toolkit with this guide to SAP API Management. Learn how to use the API Designer to create enterprise APIs and discover how to manage their lifecycle. Walk through key processes that optimize your APIs and keep them running smoothly: traffic management, mediation, security, and monetization. Get expert guidance on building applications, generating integration flows, and running analytics. Master API management from end to end In this book, you'll learn about:

- a. API Lifecycle Walk through API management from end to end: design, management, consumption, and more. Understand how components such as the Developer Portal and API Gateway support the API lifecycle.
- b. Key Processes Make the most of your APIs. See how to monitor traffic; perform message transformation, parsing, and validation; handle API security threats; and monetize API products.
- c. Consumption and Analytics Get your APIs working for you. Learn how to consume APIs in SAP Fiori apps, mobile apps built with SAP Mobile Services, and more. Then, analyze API consumption to gain insight into usage trends and performance.

Highlights Include: 1) Architecture 2) End-to-end lifecycle 3) Design and development 4) Traffic management 5) Mediation 6) Security 7) Monetization 8) Consumption 9) Enterprise integration 10) Analytics 11) SAP API Business Hub

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.

Develop on Yammer is your guide to integrating the Yammer social network with your company's application ecosystem. By developing custom apps and features on the Yammer platform, you can make your workplace more productive, encourage communication and feedback, and get your colleagues collaborating across a range of platforms, including SharePoint, ASP.NET, and Windows Phone. The book begins with an introduction to the development options

available along with guidance on how to set up a Yammer developer account. You'll then take your first step in Yammer integration by building a Yammer feed into a web page or other JavaScript-based client application, before diving into app creation and management on the Yammer platform. The authors provide a deep dive into the Yammer authorization process from client-side and server-side perspectives, and you'll find out how to work closely with Yammer's data streams and its full range of development possibilities using Open Graph and Yammer's REST API. The final chapters cover how to build Yammer integration into standalone applications for SharePoint and Windows Phone 8 with Yammer SDKs. All chapters are illustrated with examples and sample code, and a case study follows the development of a workplace training application as the authors apply each technique, so you can see how to make the most of what Yammer has to offer.

What You'll Learn

- Why develop on Yammer, and what development options are available
- How to add a Yammer feed to an HTML-based application using Yammer Embed, to bring relevant news and discussions into the contexts where they matter
- How to develop custom Yammer features for your SharePoint, Office or web applications on the client side with the Yammer JavaScript SDK
- How to carry out secure authorization and authentication on Yammer
- How to use Yammer Open Graph and REST APIs to posts messages, create custom activities and get data from Yammer-integrated applications
- How to work with the Yammer Windows Phone 8 SDK to add Yammer functionality to a Windows Phone 8 application

Who This Book Is For

This book is targeted at developers with a background in .NET/C# development. Readers should be comfortable working with JavaScript. Software architects will also find this book valuable for planning social integration across their companies' business ecosystems.

Starting your first project with Spring Boot can be a bit daunting given the vast options that it provides. This book will guide you step-by-step along the way to be a Spring Boot hero in no time. The book covers:

- * Setup of your project
- * Security and user management for your application
- * Writing REST endpoints
- * Connecting with a database from your application
- * Unit and integration testing for all aspects
- * Writing documentation for your REST endpoints
- * Support file upload from your REST API

OAuth 2 is like the web version of a valet key. Instead of unsafe password-sharing, OAuth offers a much more secure delegation protocol. OAuth is used everywhere, from large providers like Facebook and Google, to small APIs at startups, and even cloud services, it's the worldwide standard. OAuth 2 is the must-know security protocol on the web today. "OAuth 2 in Action" teaches practical use and deployment of this protocol from the perspective of a client, authorization server, and resource server. It begins with an overview of OAuth and a look at its components and interactions. Using hands-on examples, it shows how to build a first OAuth client, followed by an authorization server, and then a protected resource. The second part of the book dives into crucial implementation vulnerability, and more advanced topics. By the end of this book,

anyone will be able to build and deploy applications that use OAuth on both the client and server sides. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

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

- This is the latest practice test to pass the C2150-609 IBM Security Access Manager V9.0 Deployment Exam. - It contains 138 Questions and Answers. - All the questions are 100% valid and stable. - You can reply on this practice test to pass the exam with a good mark and in the first attempt.

44 reusable patterns to develop and deploy reliable production-quality microservices-based applications, with worked examples in Java Key Features 44 design patterns for building and deploying microservices applications Drawing on decades of unique experience from author and microservice architecture pioneer Chris Richardson A pragmatic approach to the benefits and the drawbacks of microservices architecture Solve service decomposition, transaction management, and inter-service communication Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Microservices Patterns teaches you 44 reusable patterns to reliably develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for composing services into systems that scale and perform under real-world conditions. More than just a patterns catalog, this practical guide with worked examples offers industry-tested advice to help you design, implement, test, and deploy your microservices-based application. What You Will Learn How (and why!) to use microservices architecture Service decomposition strategies Transaction management and querying patterns Effective testing strategies Deployment patterns This Book Is Written For Written for enterprise developers familiar with standard enterprise application architecture. Examples are in Java. About The Author Chris Richardson is a Java Champion, a JavaOne rock star, author of Manning's POJOs in Action, and creator of the original CloudFoundry.com. Table of Contents Escaping monolithic hell Decomposition strategies Interprocess communication in a microservice architecture Managing transactions with sagas Designing business logic in a microservice architecture Developing business logic with event sourcing Implementing queries in a microservice architecture External API patterns Testing microservices: part 1 Testing microservices: part 2 Developing production-ready services Deploying microservices Refactoring to microservices

* New edition of the proven Professional JSP – best selling JSP title at the moment. This is the title that others copy. * This title will coincide with the release of the latest version of the Java 2 Enterprise Edition, version 1.4. JavaServer Pages 2.0 is a core component of this new release. * One single text gives comprehensive coverage of JavaServer Pages, the enhancements in version 2.0, and the most popular associated technologies, including Servlets, JSTL and Apache Tomcat 5.

Implement application programming interface (API) usability, security, availability, reliability, and scalability to extend your company's market and potentially generate revenue. Businesses know they need to extend their markets into the digital world, and expose internal data to the Internet. This book shows how stakeholders within an organization can make it a successful journey. Stakeholder needs are not identical and departments experience difficulties discussing requirements with each other due to their different fundamental understanding of the process. The goal of this book is to introduce a common language for all business groups—developers, security experts, architects, product managers—around APIs and provide an overview of all aspects that need to be considered when exposing internal data. Most of the content in this book is based on feedback from real-world enterprise customer questions, challenges, and business scenarios. Practical guidance is provided on the business value of APIs, the general requirements to know, and how to undertake an audience-based implementation. You will learn how to protect access to data, as well as API error handling, documentation, management, integration, and more. What You'll Learn Know the types of APIs and their business and technical requirements The main benefits of APIs, including business value, loose coupling, and frequent updates Protect access to APIs through role-based access, attribute-based access, and rate limiting Distinguish between OAuth and OpenID Connect, and know how they both work Manage API error handling, including what should and should not be handled Understand the distinction between runtime, dynamic data, and static data Leverage external APIs as part of your own APIs Who This Book Is For API developers, API security experts, software architects, product owners, and business owners

ASP.NET Web API is a key part of ASP.NET MVC 4 and the platform of choice for building RESTful services that can be accessed by a wide range of devices. Everything from JavaScript libraries to RIA plugins, RFID readers to smart phones can consume your services using platform-agnostic HTTP. With such wide accessibility, securing your code effectively needs to be a top priority. You will quickly find that the WCF security protocols you're familiar with from .NET are less suitable than they once were in this new environment, proving themselves cumbersome and limited in terms of the standards they can work with. Fortunately, ASP.NET Web API provides a simple, robust security solution of its own that fits neatly within the ASP.NET MVC programming model and secures your code without the need for SOAP, meaning that there is no limit to the range of devices that it can work with – if it can understand HTTP, then it can be secured by Web API. These SOAP-less security techniques are the focus of this book. What you'll learn Identity management and cryptography HTTP basic and digest authentication and Windows authentication HTTP advanced concepts such as web caching, ETag, and CORS Ownership factors of API keys, client X.509 certificates, and SAML tokens Simple Web Token (SWT) and signed and encrypted JSON Web Token (JWT) OAuth 2.0 from the ground up using JWT as the bearer token

OAuth 2.0 authorization codes and implicit grants using DotNetOpenAuth Two-factor authentication using Google Authenticator OWASP Top Ten risks for 2013 Who this book is for No prior experience of .NET security is needed to read this book. All security related concepts will be introduced from first-principles and developed to the point where you can use them confidently in a professional environment. A good working knowledge of and experience with C# and the .NET framework are the only prerequisites to benefit from this book. Table of Contents Welcome to ASP.NET Web API Building RESTful Services Extensibility Points HTTP Anatomy and Security Identity Management Encryption and Signing Custom STS through WIF Knowledge Factors Ownership Factors Web Tokens OAuth 2.0 Using Live Connect API OAuth 2.0 From the Ground Up OAuth 2.0 Using DotNetOpenAuth Two-Factor Authentication Security Vulnerabilities Appendix: ASP.NET Web API Security Distilled

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.

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.

Apply microservices patterns to build resilient and scalable distributed systems Key Features Understand the challenges of building large-scale microservice landscapes Build cloud-native production-ready microservices with this comprehensive guide Discover how to get the best out of Spring Cloud, Kubernetes, and Istio when used together Book Description Microservices architecture allows developers to build and maintain applications with ease, and enterprises are rapidly adopting it to build software using Spring Boot as their default framework. With this book, you'll learn how to efficiently build and deploy microservices using Spring Boot. This microservices book will take you through tried and tested approaches to building distributed systems and implementing microservices architecture in your organization. Starting with a set of simple cooperating microservices developed using Spring Boot, you'll learn how you can add functionalities such as persistence, make your microservices reactive, and describe their APIs using Swagger/OpenAPI. As you advance, you'll understand how to add different services from Spring Cloud to your microservice system. The book also demonstrates how to deploy your microservices using Kubernetes and manage them with Istio for improved security and traffic

management. Finally, you'll explore centralized log management using the EFK stack and monitor microservices using Prometheus and Grafana. By the end of this book, you'll be able to build microservices that are scalable and robust using Spring Boot and Spring Cloud. What you will learn Build reactive microservices using Spring Boot Develop resilient and scalable microservices using Spring Cloud Use OAuth 2.0/OIDC and Spring Security to protect public APIs Implement Docker to bridge the gap between development, testing, and production Deploy and manage microservices using Kubernetes Apply Istio for improved security, observability, and traffic management Who this book is for This book is for Java and Spring developers and architects who want to learn how to break up their existing monoliths into microservices and deploy them either on-premises or in the cloud using Kubernetes as a container orchestrator and Istio as a service Mesh. No familiarity with microservices architecture is required to get started with this book.

Master powerful techniques and approaches for securing IoT systems of all kinds—current and emerging Internet of Things (IoT) technology adoption is accelerating, but IoT presents complex new security challenges. Fortunately, IoT standards and standardized architectures are emerging to help technical professionals systematically harden their IoT environments. In *Orchestrating and Automating Security for the Internet of Things*, three Cisco experts show how to safeguard current and future IoT systems by delivering security through new NFV and SDN architectures and related IoT security standards. The authors first review the current state of IoT networks and architectures, identifying key security risks associated with nonstandardized early deployments and showing how early adopters have attempted to respond. Next, they introduce more mature architectures built around NFV and SDN. You'll discover why these lend themselves well to IoT and IoT security, and master advanced approaches for protecting them. Finally, the authors preview future approaches to improving IoT security and present real-world use case examples. This is an indispensable resource for all technical and security professionals, business security and risk managers, and consultants who are responsible for systems that incorporate or utilize IoT devices, or expect to be responsible for them.

- Understand the challenges involved in securing current IoT networks and architectures
- Master IoT security fundamentals, standards, and modern best practices
- Systematically plan for IoT security
- Leverage Software-Defined Networking (SDN) and Network Function Virtualization (NFV) to harden IoT networks
- Deploy the advanced IoT platform, and use MANO to manage and orchestrate virtualized network functions
- Implement platform security services including identity, authentication, authorization, and accounting
- Detect threats and protect data in IoT environments
- Secure IoT in the context of remote access and VPNs
- Safeguard the IoT platform itself
- Explore use cases ranging from smart cities and advanced energy systems to the connected car
- Preview evolving concepts that will shape the future of IoT security

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

Want to build APIs like Facebook? Since Facebook's framework for building APIs, GraphQL, has become publicly available, this ambition seems to be within

reach for many companies. And that is great. But first, let's learn what GraphQL really is and - maybe even more importantly - let's figure out how to apply GraphQL to build APIs that consumers love. Do you like to learn hands-on? In this book, we take a hands-on approach to learning GraphQL. We first explore the concepts of the two GraphQL languages using examples. Then we start writing some code for our first GraphQL API. We develop this API step by step, from creating a schema and resolving queries, over mocking data and connecting data sources all the way to developing mutations and setting up event subscriptions. Are your API consumers important to you? This book shows you how to apply a consumer-oriented design process for GraphQL APIs, so you can deliver what your consumers really want: an API that solves their problems and offers a great developer experience. Do you want to enable the API consumers so they can build great apps? This book explains the GraphQL query language, which allows the API consumers to retrieve data, write data and get notified when data changes. More importantly, you let them decide, which data they really need from the API. Do you want to make your API easy and intuitive to use? This book shows you how to use the GraphQL schema language to define a type system for your API, which serves as a reference documentation and helps your API consumers write queries that are syntactically correct. Do you want to profit from what has worked for others? This book provides a collection of best practices for GraphQL that have worked for other companies, e.g. regarding pagination, authentication and caching. REST vs. GraphQL: Which one is better? GraphQL and REST are competing philosophies for building APIs. It is not in the scope of this book to compare or discuss the two approaches. The focus of this book is on a hands-on approach for learning GraphQL.

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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 languages, 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 Mongoose and 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. 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.

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

Design and build Web APIs for a broad range of clients—including browsers and mobile devices—that can adapt to change over time. This practical, hands-on guide takes you through the theory and tools you need to build evolvable HTTP services with Microsoft's ASP.NET Web API framework. In the process, you'll learn how design and implement a real-world Web API. Ideal for experienced .NET developers, this book's sections on basic Web API theory and design also apply to developers who work with other development stacks such as Java, Ruby, PHP, and Node. Dig into HTTP essentials, as well as API development concepts and styles Learn ASP.NET Web API fundamentals, including the lifecycle of a request as it travels through the framework Design the Issue Tracker API example, exploring topics such as hypermedia support with collection+json Use behavioral-driven development with ASP.NET Web API to implement and enhance the application Explore techniques for building clients that are resilient to change, and make it easy to consume hypermedia APIs Get a comprehensive reference on how ASP.NET Web API works under the hood, including security and testability

Leverage existing free open source software to build an identity and access management (IAM) platform that can serve your organization for the long term. With the emergence of open standards and open source software, it's now easier than ever to build and operate your own IAM stack. The most common culprit of the largest hacks has been bad personal identification. In terms of bang

for your buck, effective access control is the best investment you can make. Financially, it's more valuable to prevent than to detect a security breach. That's why Identity and Access Management (IAM) is a critical component of an organization's security infrastructure. In the past, IAM software has been available only from large enterprise software vendors. Commercial IAM offerings are bundled as "suites" because IAM is not just one component. It's a number of components working together, including web, authentication, authorization, cryptographic, and persistence services. *Securing the Perimeter* documents a recipe to take advantage of open standards to build an enterprise-class IAM service using free open source software. This recipe can be adapted to meet the needs of both small and large organizations. While not a comprehensive guide for every application, this book provides the key concepts and patterns to help administrators and developers leverage a central security infrastructure. Cloud IAM service providers would have you believe that managing an IAM is too hard. Anything unfamiliar is hard, but with the right road map, it can be mastered. You may find SaaS identity solutions too rigid or too expensive. Or perhaps you don't like the idea of a third party holding the credentials of your users—the keys to your kingdom. Open source IAM provides an alternative. Take control of your IAM infrastructure if digital services are key to your organization's success.

What You'll Learn Understand why you should deploy a centralized authentication and policy management infrastructure Use the SAML or Open ID Standards for web or single sign-on, and OAuth for API Access Management Synchronize data from existing identity repositories such as Active Directory Deploy two-factor authentication services

Who This Book Is For Security architects (CISO, CSO), system engineers/administrators, and software developers

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

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. Summary Unlike traditional enterprise applications, Microservices applications are collections of independent components that function as a system. Securing the messages, queues, and API endpoints requires new approaches to security both in the infrastructure and the code. 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. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Integrating independent services into a single system presents special security challenges in a microservices deployment. With proper planning, however, you can build in security from the start. Learn to create secure services and protect application data throughout development and deployment. As microservices continue to change enterprise application systems, developers and architects must learn to integrate security into their design and implementation. Because microservices are created as a system of independent components, each a possible point of failure, they can multiply the security risk. With proper planning, design, and implementation, you can reap the benefits of microservices while keeping your application data—and your company's reputation—safe! About the book Microservices Security in Action is filled with solutions, teaching best practices for throttling and monitoring, access control, and microservice-to-microservice communications. Detailed code samples, exercises, and real-world use cases help you put what you've learned into production. Along the way, authors and software security experts Prabath Siriwardena and Nuwan Dias shine a light on important concepts like throttling, analytics gathering, access

control at the API gateway, and microservice-to-microservice communication. You'll also discover how to securely deploy microservices using state-of-the-art technologies including Kubernetes, Docker, and the Istio service mesh. Lots of hands-on exercises secure your learning as you go, and this straightforward guide wraps up with a security process review and best practices. When you're finished reading, you'll be planning, designing, and implementing microservices applications with the priceless confidence that comes with knowing they're secure! What's inside

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
About the reader
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.

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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.

ASP.NET Web API is a key part of ASP.NET MVC 4 and the platform of choice for building RESTful services that can be accessed by a wide range of devices. Everything from JavaScript libraries to RIA plugins, RFID readers to smart phones can consume your services using platform-agnostic HTTP. With such wide accessibility, securing your code effectively needs to be a top priority. You will quickly find that the WCF security protocols you're familiar with from .NET are less suitable than they once were in this new environment, proving themselves cumbersome and limited in terms of the standards they can work with. Fortunately, ASP.NET Web API provides a simple, robust security solution of its own that fits neatly within the ASP.NET MVC programming model and secures your code without the need for SOAP, meaning that there is no limit to the range of devices that it can work with – if it can understand HTTP, then it can be secured by Web API. These SOAP-less security techniques are the focus of this book.

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.

Aimed at users who are familiar with Java development, "Spring Live" is designed to explain how to integrate Spring into your projects to make software development easier. (Technology & Industrial)

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

"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

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.

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.

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 this 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.

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.

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