

Thanks to its simplicity and power, Terraform has emerged as a key player in the DevOps world. It allows you to replace the tedious, fragile, and manual parts of infrastructure management with a solid, automated foundation upon which you can build all your other DevOps practices (e.g., automated testing, Continuous Integration, Continuous Delivery) and tooling (e.g., Docker, Chef, Puppet).

This book is the fastest way to get up and running with Terraform.

You'll go from deploying the most basic "Hello, World" Terraform example (in fact, you just saw it!) all the way up to running a full tech stack (virtual servers, Kubernetes clusters, Docker containers, load balancers, databases) capable of supporting a large amount of traffic and a large team of developers—all in the span of just a few chapters. This is a hands-on tutorial that not only teaches you DevOps and infrastructure as code (IaC) principles but also walks you through dozens of code examples that you can try at home, so make sure you have your computer handy.

By the time you're done, you'll be ready to use Terraform in the real world.

Who Should Read This Book

This book is for anyone responsible for the code after it has been written. That includes sysadmins, operations engineers, release engineers, site reliability engineers, DevOps engineers, infrastructure developers, full-stack developers, engineering managers, and CTOs. No matter what your title is, if you're the one managing infrastructure, deploying code, configuring servers, scaling clusters, backing up data, monitoring apps, and responding to alerts at 3 a.m., this book is for you.

Collectively, all of these tasks are usually referred to as *operations*. In the past, it was common to find developers who knew how to write code but did not understand operations; likewise, it was common to find sysadmins who understood operations but did not know how to write code. You could get away with that divide in the past, but in the modern world, as cloud computing and the DevOps movement become ubiquitous, just about every

developer will need to learn operational skills, and every sysadmin will need to learn coding skills.

This book does not assume that you're already an expert coder or expert sysadmin—a basic familiarity with programming, the command line, and server-based software (e.g., websites) should suffice. Everything else you need you'll be able to pick up as you go, so that by the end of the book, you will have a solid grasp of one of the most critical aspects of modern development and operations: managing infrastructure as code.

In fact, you'll learn not only how to manage infrastructure as code using Terraform but also how this fits into the overall DevOps world. Here are some of the questions you'll be able to answer by the end of the book:

- Why use IaC at all?
- What are the differences between configuration management, orchestration, provisioning, and server templating?
- When should you use Terraform, Chef, Ansible, Puppet, Pulumi, CloudFormation, Docker, Packer, or Kubernetes?
- How does Terraform work, and how do you use it to manage your infrastructure?
- How do you create reusable Terraform modules?
- How do you securely manage secrets when working with Terraform?
- How do you use Terraform with multiple regions, accounts, and clouds?
- How do you write Terraform code that's reliable enough for production usage?
- How do you test your Terraform code?
- How do you make Terraform a part of your automated deployment process?