

# Introduction to Terraform

# Terraform Introduction

## What is Terraform?

- Terraform is an open source IaC tool, created by HashiCorp
  - HashiCorp recently went public - great support for Terraform
  - Written in Golang, exported as a single binary - easy to download and maintain
- Currently the most popular IaC solution in the market
  - In demand and highly marketable skillset
- Terraform uses a configuration language called HCL - developed by HashiCorp
  - Easy to read and write - but can get complex
- Terraform is not just for AWS or cloud providers - Multi cloud & specific vendor support
  - For example, MongoDB Atlas has official plugins to manage and create MongoDB clusters with Terraform
  - Use Terraform to manage GCP, AWS, Azure etc., all in one configuration

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- What makes Terraform so great?
  - Really good documentation & support
    - Official docs are well written
    - Lots of online support, find answers to questions quick
  - The HCL language is easy to read, and learning how to write requires no programming skills
  - Awesome state management system - very easy to manage your infrastructure & all of its dependencies
  - Provides operational confidence - dry run commands
  - Ability to create re-usable infrastructure with Modules
    - Similar to functions or classes in programming

```
resource "aws_instance" "main" {  
  provider = alias.west  
  ami = data.aws_ami.aws_linux_2.id  
  
  instance_type          = "t3.small"  
  associate_public_ip_address = true  
  
  vpc_security_group_ids = [aws_security_group.allow_ssh.id]  
  
  ebs_block_device {  
    device_name = "/dev/sdf"  
    volume_type = "gp2"  
    volume_size = "2"  
  }  
  
  tags = merge(local.tags, [  
    Name : "levelup_with_terraform"  
  ])  
}
```