

Hashicorp Terraform

Hashicorp - Introduction

- HashiCorp was founded by Mitchell Hashimoto and Armon Dadgar in 2012 with the goal of revolutionizing data center management, application development, delivery, and maintenance.
- **HashiCorp Product Suite:**
 - Terraform - Automated Infrastructure Provisioning
 - Vault - Secrets management and data protection
 - Consul - Automate service-based networking in the cloud
 - Nomad - Deploy and manage any containerized, legacy, or batch application.
 - Packer - Build automated machine images(AMI)
 - Vagrant - Create development environments

Terraform vs AWS CloudFormation

- **Terraform:**

- HCL (HashiCorp Configuration Language)
- It is easy to reuse code using modules
- It has built-in functions, including conditionals and loops
- Keeps its state in a file. This file can be stored on disk, source control or S3.

- **CloudFormation:**

- JSON or YAML.
- Intrinsic functions of CloudFormation are noticeably limited in comparison.
- Supports nested stacks, you have to keep all your infrastructure code in a gigantic file in one project repository
- It runs on AWS infrastructure and manages the state for you.

Terraform Version 0.13

New Features:

- `count` and `for_each` for modules
- `depends_on` for modules
- Automatic installation of third-party providers
- Custom validation rules for input variables
- New Kubernetes remote state storage backend
- Terraform v0.13 no longer includes the `terraform 0.12upgrade` command for automatically migrating module source code from v0.11 to v0.12 syntax.
- If your modules are written for v0.11 and earlier you may need to upgrade their syntax using the latest minor release of Terraform v0.12 before using Terraform v0.13.

Infrastructure as code(IAC) Tools

- Terraform
- AWS CloudFormation
- Azure Resource Manager
- Google Cloud Deployment Manager
- Oracle Resource Manager