Terraform Providers

Terraform Providers - Introduction

- Terraform is used to create, manage, and update infrastructure resources
- A provider is responsible for understanding API interactions and exposing resources.
- Most providers configure a specific infrastructure platform (either cloud or self-hosted).
- Providers can also offer local utilities for tasks like generating random numbers for unique resource names.
- The Terraform Registry is the main directory of publicly available Terraform providers, and hosts providers for most major infrastructure platforms.

Terraform - Major Cloud Providers

- Amazon Web Services
- Azure
- Google Cloud Platform
- Alibaba Cloud
- Oracle Cloud Platform

Terraform - Multiple Provider Configurations

alias:

- You can optionally define multiple configurations for the same provider, and select which one to use on a per-resource or per-module basis.
- To create multiple configurations for a given provider, include multiple provider blocks with the same provider name.

```
provider "aws" {
  region = "us-east-1"
}

provider "aws" {
  alias  = "west"
  region = "us-west-2"
}
```

profile:

- You can use an AWS credentials or configuration file to specify your credentials
- Terraform also supports a profile configuration and matching AWS_PROFILE environment variable.

```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
    }
  }
}

provider "aws" {
  profile    = "default"
  region     = "us-west-2"
}

resource "aws_instance" "example" {
  ami           = "ami-830c94e3"
  instance_type = "t2.micro"
}
```

Terraform - Requiring Provider's Version

- During terraform init, if version argument is not specified, the most recent provider will be downloaded during initialization.
- For production use, you should constrain the acceptable provider versions via configuration, to ensure that new versions with breaking changes will not be automatically installed.
- Provider requirements are declared in a **required_providers** block.

```
terraform {
  required_providers {
    aws = {
      version = ">= 2.7.0"
      source = "hashicorp/aws"
    }
  }
}
```