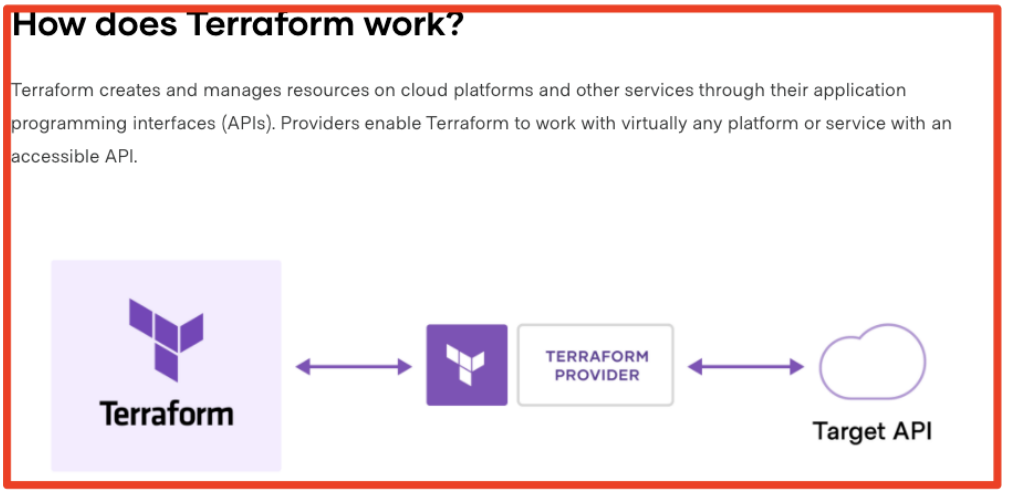
Day001

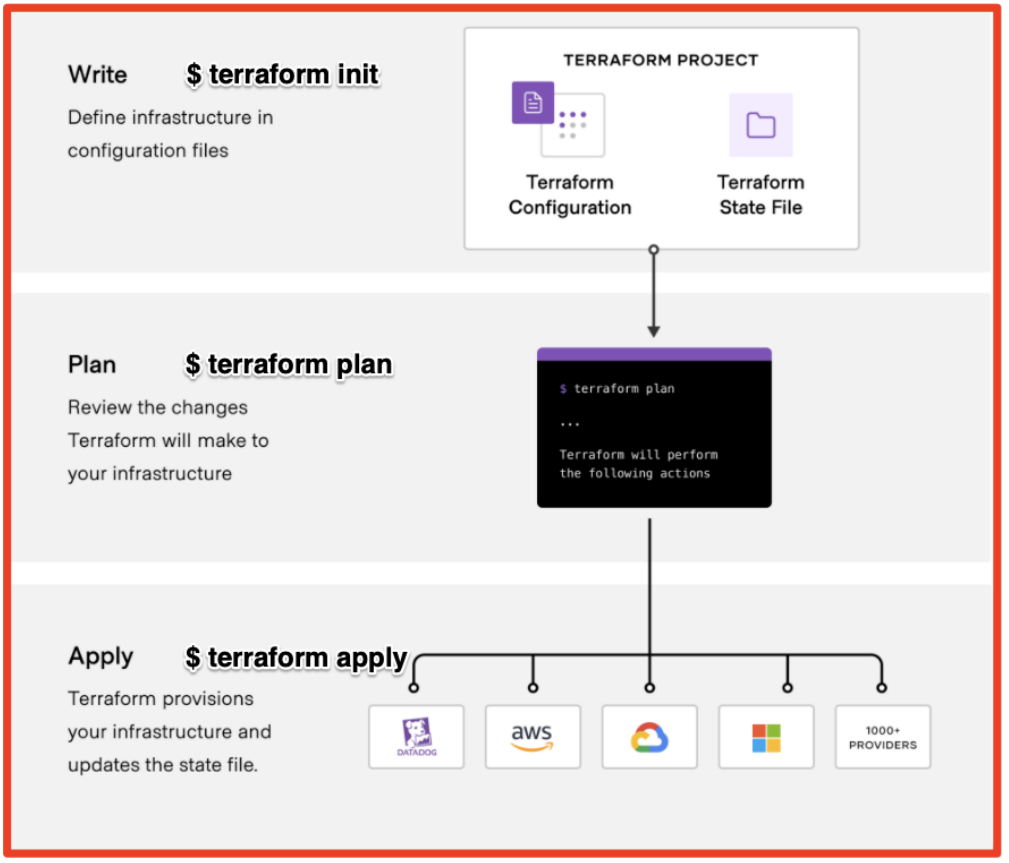
Terraform

- **About Terraform?**
  - https://www.youtube.com/watch?v=h97...

- **What is Mutable vs Immutable Infrastructure?**
  - https://www.hashicorp.com/resources/what-is-mutable-vs-immutable-infrastructure

- **Terraform Introduction**
  - Please refer to the official link Terraform Intro
  - HashiCorp Terraform is an infrastructure as code tool that lets you define both cloud and on-prem resources in human-readable configuration files that you can version, reuse, and share. You can then use a consistent workflow to provision and manage all of your infrastructure throughout its lifecycle. Terraform can manage low-level components like compute, storage, and networking resources, as well as high-level components like DNS entries and SaaS features.
  - How Terraform works:
    - 

    - The core Terraform workflow consists of three stages:
      - **Write:** You define resources, which may be across multiple cloud providers and services. For example, you might create a configuration to deploy an application on virtual machines in a Virtual Private Cloud (VPC) network with security groups and a load balancer.
      - **Plan:** Terraform creates an execution plan describing the infrastructure it will create, update, or destroy based on the existing infrastructure and your configuration.
      - **Apply:** On approval, Terraform performs the proposed operations in the correct order, respecting any resource dependencies. For example, if you update the properties of a VPC and change the number of virtual machines in that VPC, Terraform will recreate the VPC before scaling the virtual machines.

- 

- **Why Terraform**
  - Manage any infrastructure by leveraging terraform's immutable approach to manage any platforms or services, reducing the complexity of upgrading or modifying your services or infrastructure.
  - Track you infrastructure in terraform state file which acts as a source of truth of your environment.
  - Automate changes
  - Standardize configurations by leveraging terraform reusable configuration components called Modules.
  - Collaboration with team to commit changes to Version Control System(VCS) like Github or SVN etc.
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