6.4 Terraform Introduction - Executive Summary

Terraform is a powerful open-source Infrastructure-as-Code (IaC) tool developed by HashiCorp that enables the automated provisioning, management, and scaling of infrastructure across multiple cloud providers and on-premise environments. Using HashiCorp Configuration Language (HCL), Terraform allows users to define their infrastructure in a declarative manner, ensuring consistency, repeatability, and efficiency.

At its core, Terraform follows a "plan and apply" workflow: users define the desired state of their infrastructure, generate an execution plan using terraform plan to preview changes, and then apply those changes with terraform apply. It maintains a state file to track the current infrastructure, ensuring that updates are applied incrementally and accurately.

Beyond traditional IT operations, Terraform has significant applications in cybersecurity, particularly in red teaming. It allows security professionals to rapidly deploy and dismantle attack infrastructure, including command-and-control (C2) servers, phishing platforms, and VPN gateways. Its automation capabilities make it an ideal tool for creating ephemeral environments that can be quickly spun up and destroyed, minimizing detection risks and forensic footprints.

# Screenshots

