Deploy Infrastructure and Automate using Iac

Group Project:05

Team Members

Atharv Pawar	240340127034
Devendra Raut	240340127038
Atish Sawant	240340127035
Shubham Mishra	240340127007

Objective

To Deploy Infrastructure and Automate Deployment using IaC

Features of Terraform

- Plan and Apply:
  - Offers a two-step process (terraform plan and terraform apply). The plan command shows a preview of what changes will be made, while the apply command executes those changes. This feature helps prevent unintended modifications to infrastructure.
- State Management:
  - Maintains a state file that tracks the current state of your infrastructure. This state file allows Terraform to determine what changes need to be applied to match the desired state. This feature is crucial for managing complex infrastructure.

Features of EKS

- Scalability:
  - EKS allows you to scale your applications dynamically based on demand
- Managed Node Groups:
  - EKS provides managed node groups that automatically provision and manage EC2 instances in your cluster, simplifying the process of scaling worker nodes.
- Simplified Kubernetes Management:
  - EKS automates the provisioning, scaling, and management of the Kubernetes control plane, including the underlying infrastructure like EC2 instances, networking, and storage.

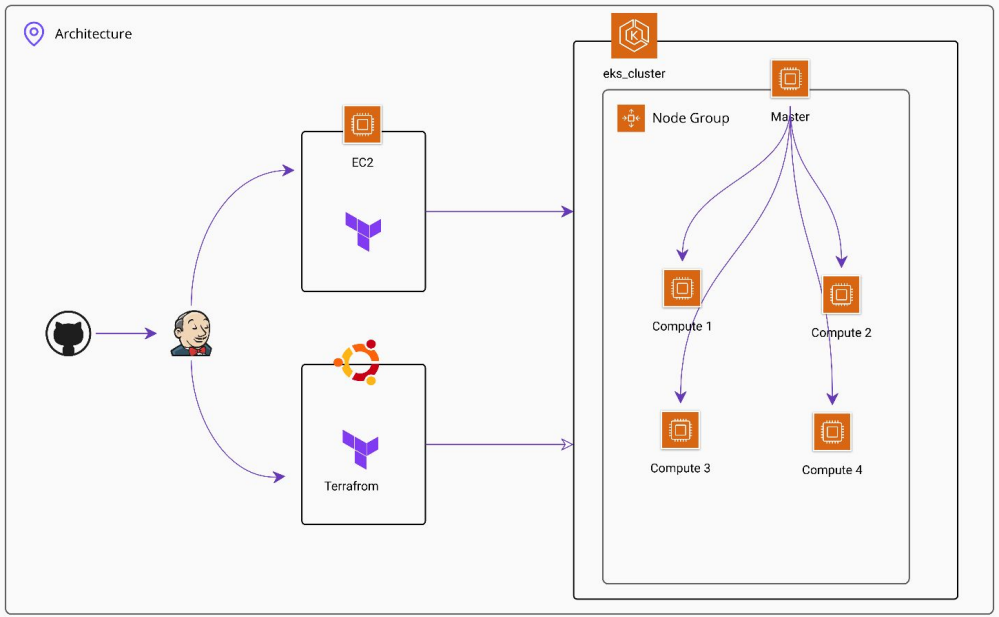
Workflow

1. Terraform Installation
2. Jenkins Installation
3. AWS IAM User Creation
4. AWS Key Pair Creation
5. SSH Key creation for VMware Instance use
6. Terraform separates files for EKS, Nodes, VPC, Providers, IAM, Security Groups
7. Github Personal Access Token
8. Git Repository of Terraform files

Future Scope

- Automating Deployments
  - Integrate Jenkins to automate the deployment process for EKS clusters, ensuring seamless and consistent updates to the environment.

Architecture



Thank You!