

Automated Container deployment and Administration in the cloud

Presented By

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Introduction:

This project aims for the automated deployment of Azure Virtual Machine and AWS EC2 Instance using the Automation tools like Terraform, Ansible, OpenSSH, Docker, Containerized Python Application along with automated CI/CD Deployment.

Note: This project focuses on reducing the manual intervention just by a single click.

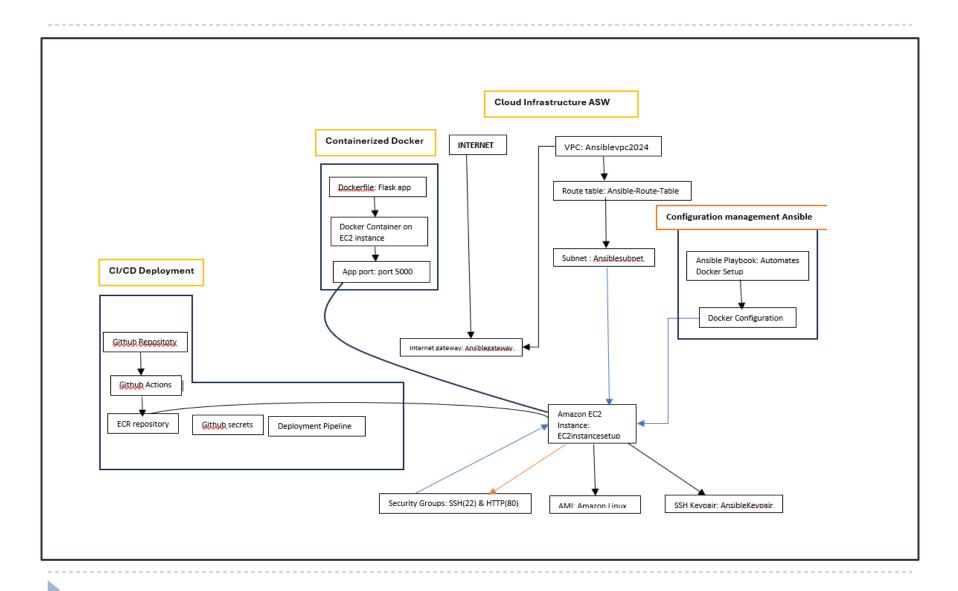


Tools used:

- Terraform
- Visual Studio
- Ansible
- PowerShell
- Docker
- GitHub Action
- Azure CLI
- OpenSSH
- WSL Linux GitHub Runner



Part 1: Infrastructure Setup (AWS)



Part 1: Infrastructure Setup



□ VPC

- Create vpc
- Create subnet
- Create Route Table
- Create Internet gateway

☐ IAM USER

- User group
- User
- Roles
- policies



Windows Local Machine

- · Download terraform
- · Extract download file
- Change Environmental Path



Visual Studio

- Provider.tf
- Main.tf
- Variable.tf
- Output.tf



TERRAFORM SCRIPTS

- · Terraform init
- Terraform plan
- Terraform apply

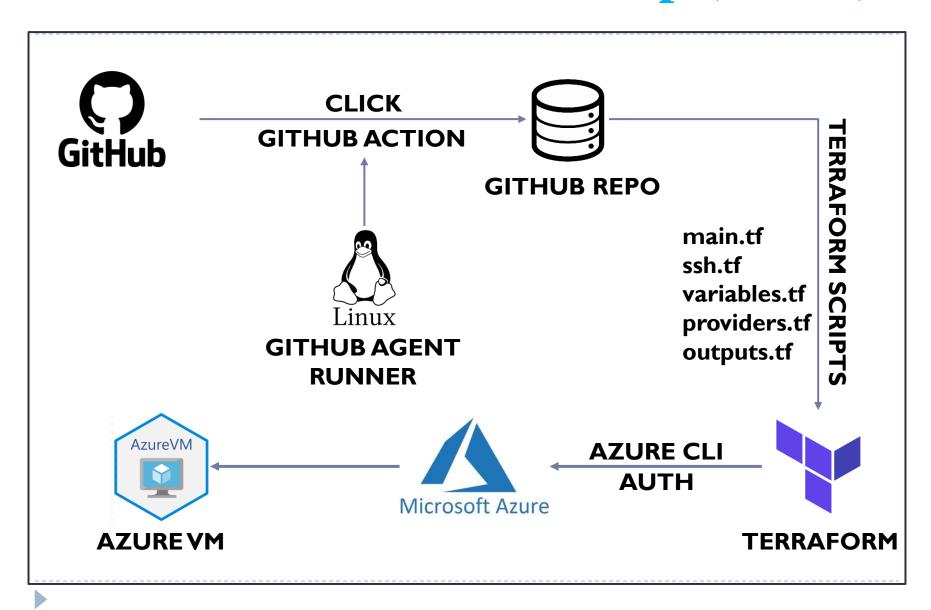


ssh -i Ansiblekeypair.pem ec2-user@public ip of EC2 instance

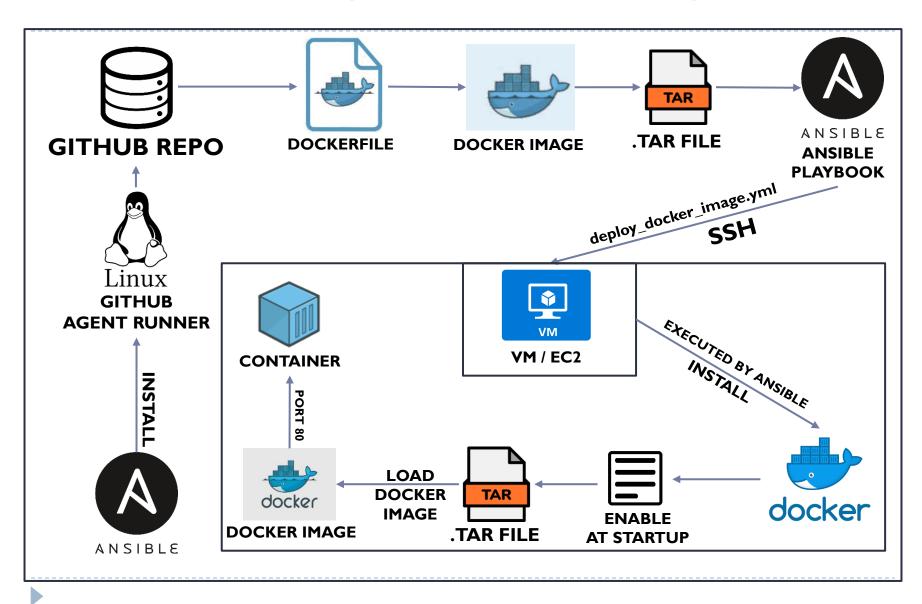
EC2InstanceSetup



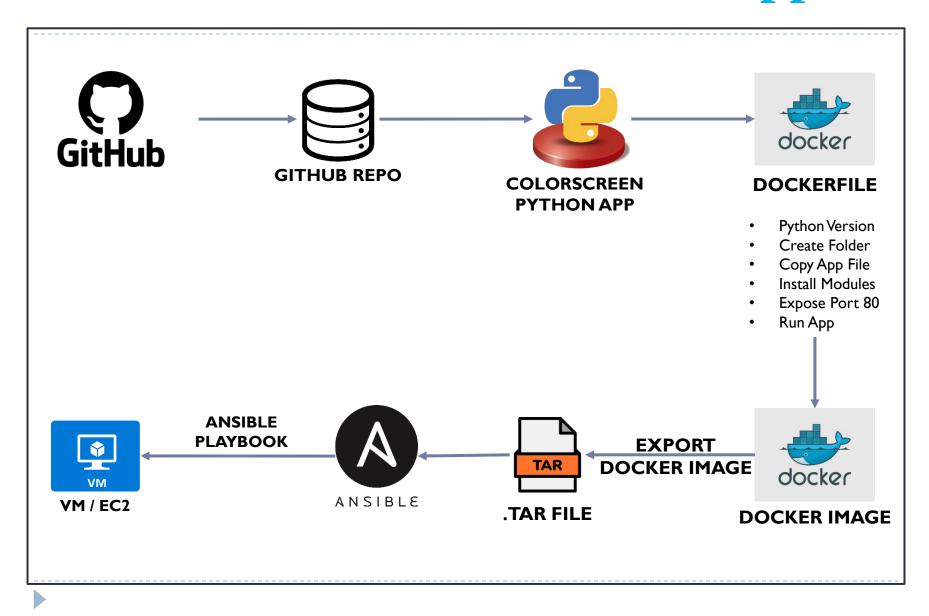
Part 1: Infrastructure Setup (Azure)



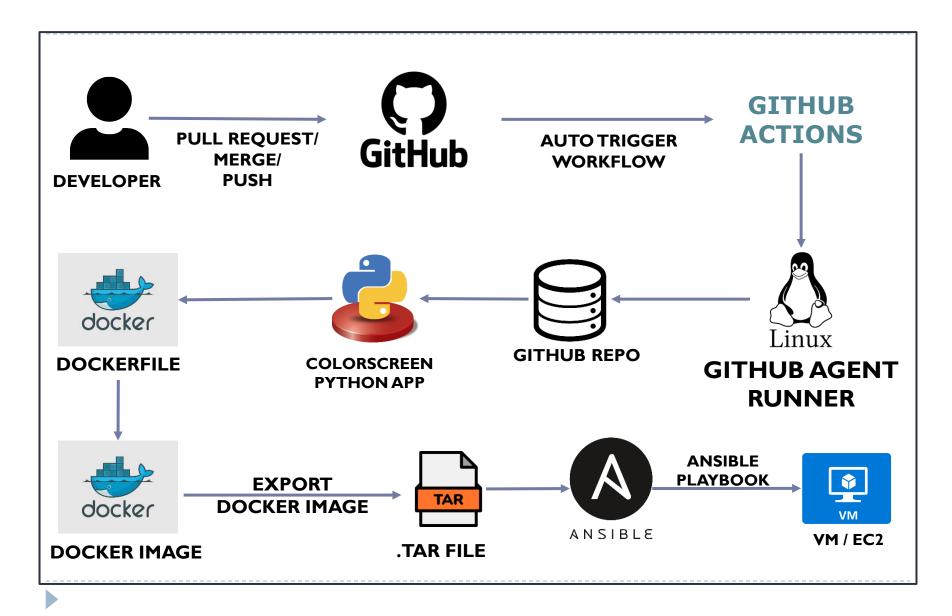
Part 2: Configuration Management



Part 3: Automated Container App



Part 4: CI/CD Automation



Conclusion:

This project demonstrates seamless automation of infrastructure and application deployment using Terraform, Ansible, Docker, and GitHub Actions. It ensures efficiency, reduces manual intervention, and supports real-time deployment of updates.

