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AKS Provisioning with Terraform and Container Deployment to AKS with Azure DevOps Services

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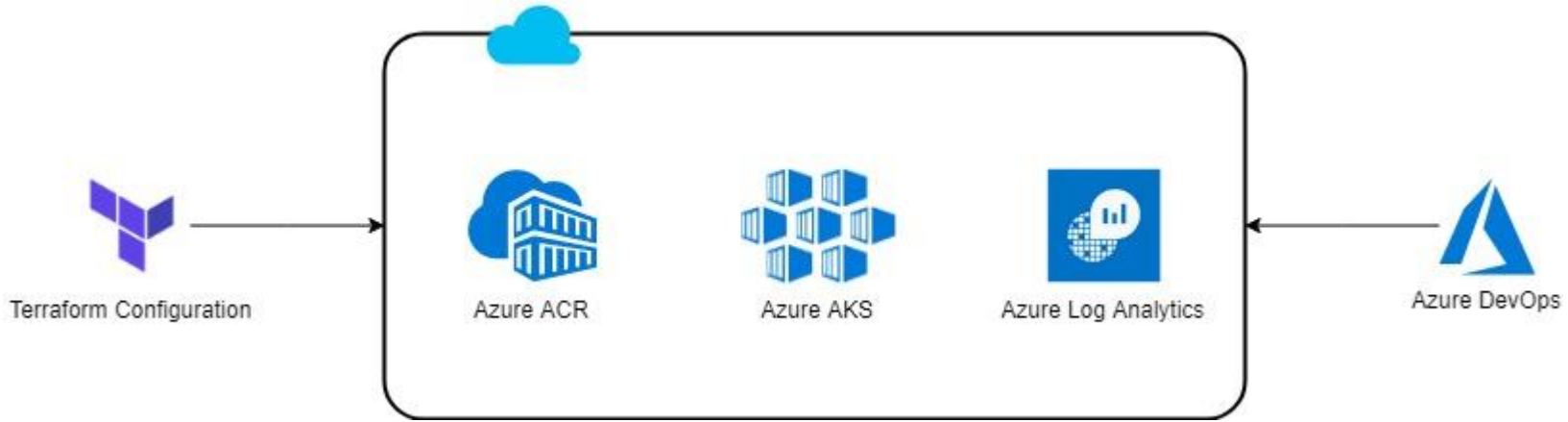
What we will cover?

- Terraform basics
- Terraform Configurations
- Provisioning Azure Resourses using Terraform
- Demo:
  Creating Azure Devops Piplines and Deploying Docker Containers into Azure Kubernetes Services

Azure Infrastructure



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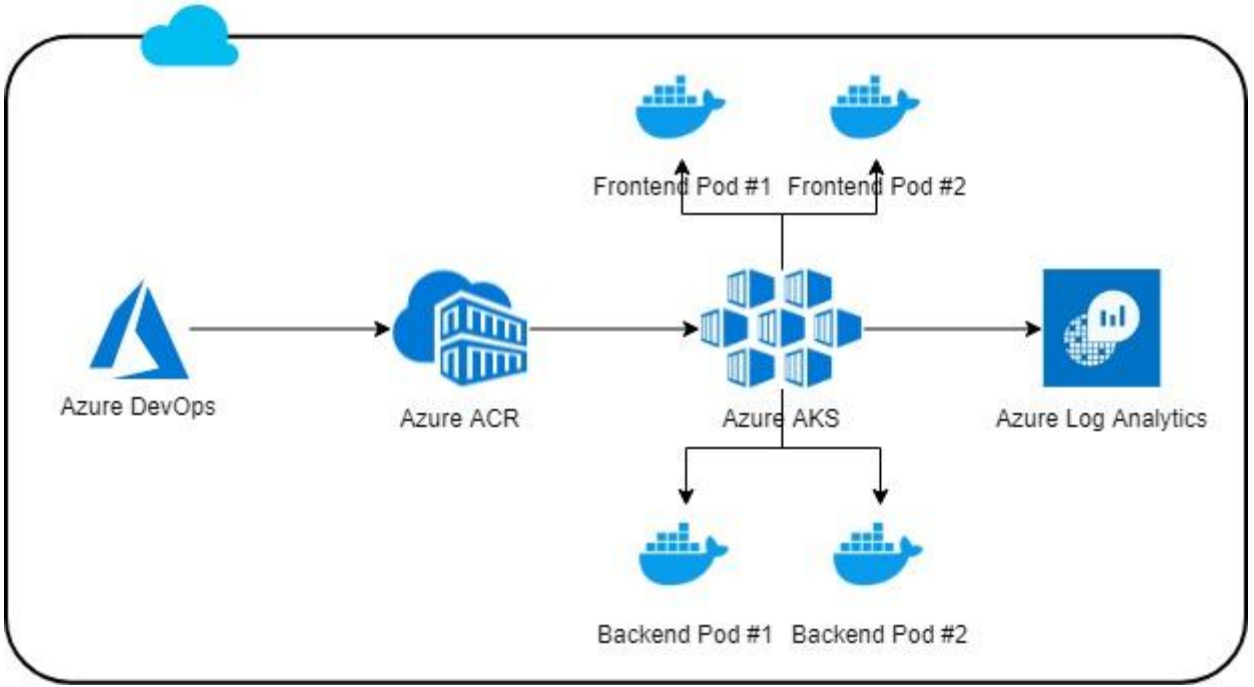
Azure DevOps



Terraform Introduction

- Terraform is a tool for building, changing and versioning infrastructure
- Terraform can manage many popular services like AWS, Azure, GC, Heroku, Digital Ocean, K8s, CloudFlare...
- Terraform configuration consists of one or more **.tf** files located in same directory
- By executing Terraform provisioning, Terraform will include content from each .tf file located in folder from which Terrform provisioning is started
- Execution history and versioning is stored in .tfstate file

Configuration Sources

- Resource
  Most important thing we'll configure with Terraform and resources are representing components of our infrastructure (VM, LB, DB, VPC, etc.)
- Data
  Allows Terraform configuration to be built on information defined outside Terraform's or by other Terraform Configuration (AWS Policy, AWS AMI etc.)
- Module
  Self-Contained Terraform Configuration package which provide component reusability, organization improvement and treating pieces of infrastructure as a black box
  Modules could be loaded from Terrafom Registry or elsewere from the internet

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Key Commands

- `terraform init`
- `terraform workspace`
- `terraform plan`
- `terraform apply`
- `terraform destroy`

Provisioners

- Local
  Executes shell commands on machine running Terraform

- Remote
  Executes shell commands on remote machine

- File
  Copies Files and or directories from local to remote machine

Workspace (previously Environments)

- Each Terraform configuration is associated with backend and state where persistent data is stored
- Persistent data stored in the backend belongs to the workspace

- Initially there is only one workspace named ***default***

- Default workspace cannot be deleted

- Perfect for using and deploying multiple parallel configurations

Input Environment Variables

- string – collection of uniques values
- map – multiple key-value pairs
- list – multiple values to use

TF_VAR_ENVIRONMENT=QA

```
variable "ENVIRONMENT" {
    type = "string"
}
```

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Output Environment Variables

```
output "acr_login_server" {
value = "${azurerm_container_registry.acr.login_server}"
}
```

```
terraform output acr_login_server
```

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DEMO

DA LI VAM SE SVIDJELO OVO PREDAVANJE?

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2. Ocijenite predavanja kroz konferencijske mobilne aplikacije pod nazivom NetWork Conference koje su dostupne za Android i iOS mobilne uređaje.

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