Who am I?

- Senior Cloud Solution Architect @ Microsoft
- Blog at www.techielass.com
- Founder of the Glasgow Azure User Group
- STEM Ambassador
- 18+ years in the IT industry
- IT Pro

Agenda

- What is Infrastructure as Code

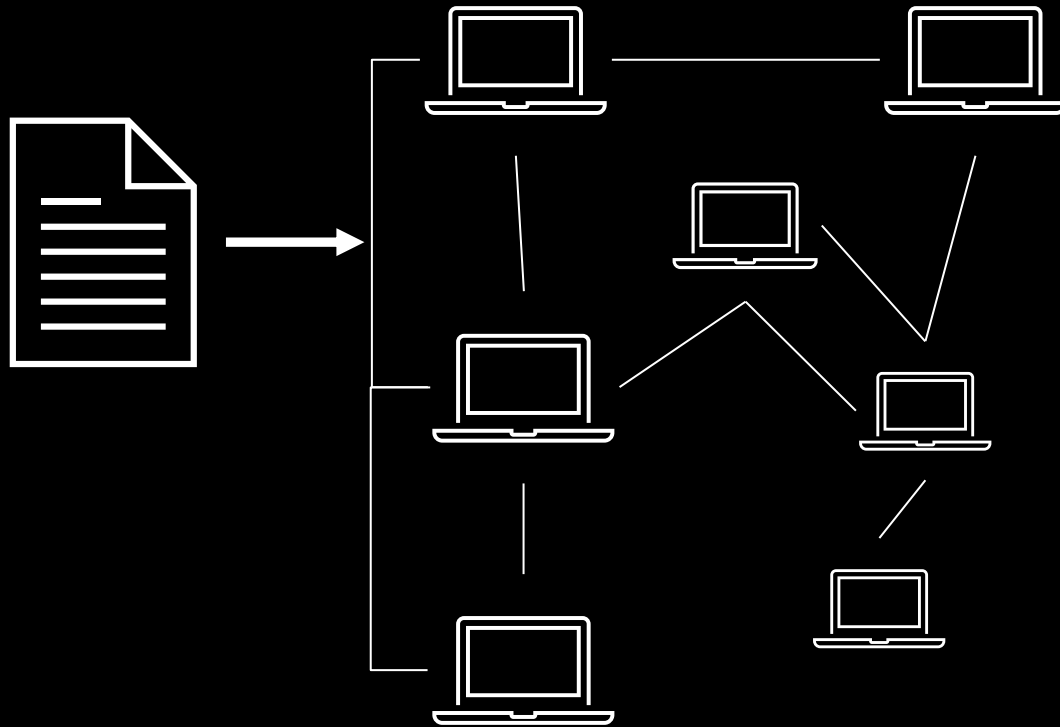- Introduction to Azure Bicep

- Introduction to Terraform

What is Infrastructure as Code?

Deploying infrastructure in the Cloud can be **complex**.

A solution needs to help resolve **problems** with consistency, repeatability, and reduce management overhead.

Infrastructure as Code

Infrastructure as code, sometimes referred to as *IaC*, is the process of provisioning resources similar to how software is deployed.

Infrastructure as Code languages

Infrastructure as Code languages

Learn more: aka.ms/iacwithsarah

What is Azure Bicep?

- Bicep is a Resource Manager template language that's used to declaratively deploy Azure resources.

- Intended to be easy to understand and straightforward to learn.

- It is a Domain Specific Language (DSL).

- 100% free and open source.

Learn more: aka.ms/iacwithsarah

Benefits of Azure Bicep

- Developed by Microsoft.

- It's free.

- Supports modularity.

- Has a Visual Studio Code extension.

What does Azure Bicep look like?

```
resource storageAccount 'Microsoft.Storage/storageAccounts@2022-09-01' = {
  name: 'toylaunchstorage'
  location: 'westus3'
  sku: {
    name: 'Standard_LRS'
  }
  kind: 'StorageV2'
  properties: {
    accessTier: 'Hot'
  }
}
```

Learn more: aka.ms/iacwithsarah

What is Terraform?

- Define and manage your resources in a declarative way.

- Supports multiple cloud providers and on-prem environments.

- Open-source tool.

- Created by HashiCorp.

Benefits of Terraform

- Portable across cloud or on-prem environments.

- Supports modularity.

- Large community following.

What does Terraform look like?

```
terraform {
  required_providers {
    azurerm = {
      source = "hashicorp/azurerm"
    }
  }
}
provider "azurerm" {
  features {}
}

resource "azurerm_storage_account" "toystorageaccount" {
  name                     = "toylaunchstorage"
  resource_group_name      = "automation-inventory"
  location                 = "westus3"
  account_tier             = "Standard"
  account_replication_type = "LRS"
  access_tier              = "Hot"
}
```

Infrastructure as Code Best Practices

- Store Infrastructure as Code in a version control system.

- Scan for misconfigurations.

- Prevent hard coded secrets.

- Find a good balance with your documentation.

- Use Continuous Integration/Continuous Deployment (CI/CD).

Azure Bicep v Terraform

	Terraform	Azure Bicep
Programming Paradigm	Declarative	Declarative
Cloud Provider Support	Multi-cloud	Azure
Resource Types	Multi-vendor	Azure
Community	Large	Growing

Summary

- Azure Bicep is the Microsoft developed Infrastructure as Code language.

- Terraform is an Infrastructure as Code language that allows you to interact with multiple vendors.

- Be sure to document your use of Infrastructure as Code to help others in your team.

Resources

Learn more:

https://aka.ms/iacwithsarah

Thank you!

Any questions?

Learn more:

https://aka.ms/iacwithsarah