

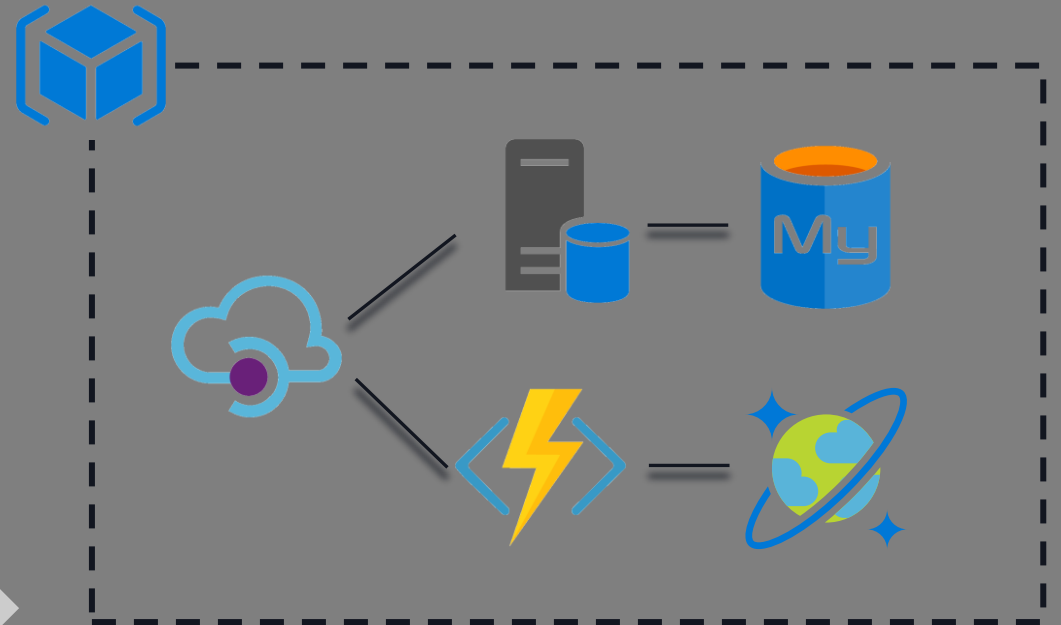
# Bicep: IaC for Azure – reinvented

Henry Been

## FROM CODE

```
resource storage 'Microsoft.Storage/  
  → storageAccounts@2021-02-01' = {  
  name: 'storageDemo456'  
  kind: 'StorageV2'  
  location: 'west europe'  
  sku: {  
    name: 'Standard_LRS'  
    tier: 'Standard'  
  }  
}
```

## TO RESOURCES



# WHO IS THAT DUDE?



- Dimensions
- Used for Dashboards & Alerts

Rolled up over time

**HENRY BEEN**

**Independent Devops & Azure Architect**

**E:** [henry@azurespecialist.nl](mailto:henry@azurespecialist.nl)

**T:** [@henry\\_been](https://twitter.com/henry_been)

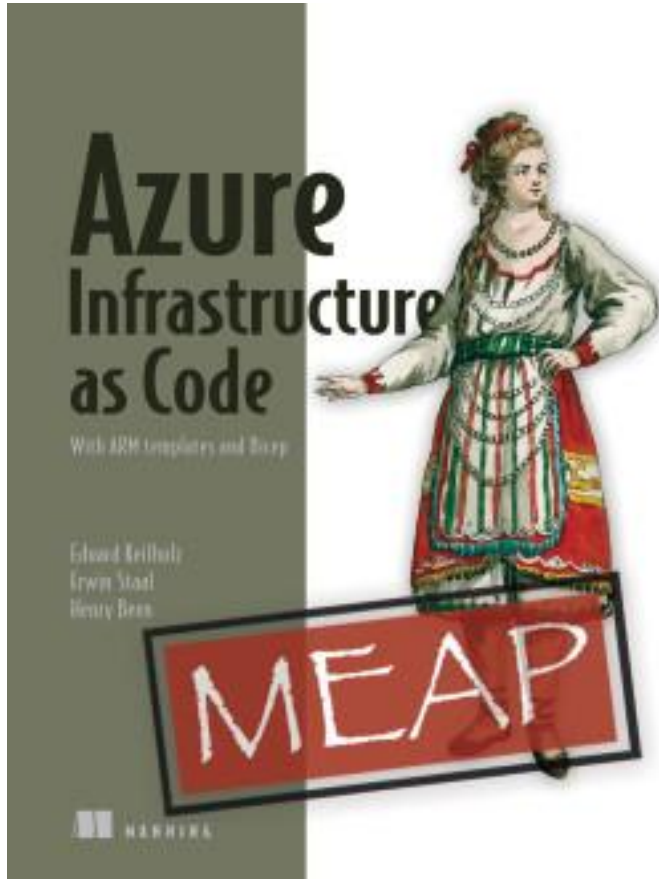
**L:** [linkedin.com/in/henrybeen](https://www.linkedin.com/in/henrybeen)

**W:** [henrybeen.nl](http://henrybeen.nl)



# Azure Infrastructure as Code


- ARM Templates
- Azure BicepLang
- Template Specs
- Deployment Spec
- Azure Policy



In early access, and with 35% off using the code **au35bee**

[Dashboard](#) > [New](#) > [Azure Cosmos DB](#) > Create Azure Cosmos DB Account

## Create Azure Cosmos DB Account

 Try Cosmos DB for free, up to 20K RU/s, for 30 days with unlimited renewals. →[Basics](#) [Network](#) [Tags](#) [Review + create](#)


Azure Cosmos DB is a globally distributed, multi-model, fully managed database service. Try it for free, for 30 days with unlimited renewals. Go to production starting at \$24/month per database. Containers included. [Learn more](#)

## ACCOUNT DETAILS


Subscription to manage deployed resources and create resource groups like folders to organize and manage resources.


\* Subscription    
\* Resource group    
[Create new resource group](#)

## INSTANCE DETAILS

\* Account Name  

\* API   

Apache Spark    [Apache Spark Preview](#)

\* Location  

Geo-Redundancy  

Multi-region  

[Review + create](#)[Previous](#)[Next: Network](#)

# NO CLICKY CLICKY!

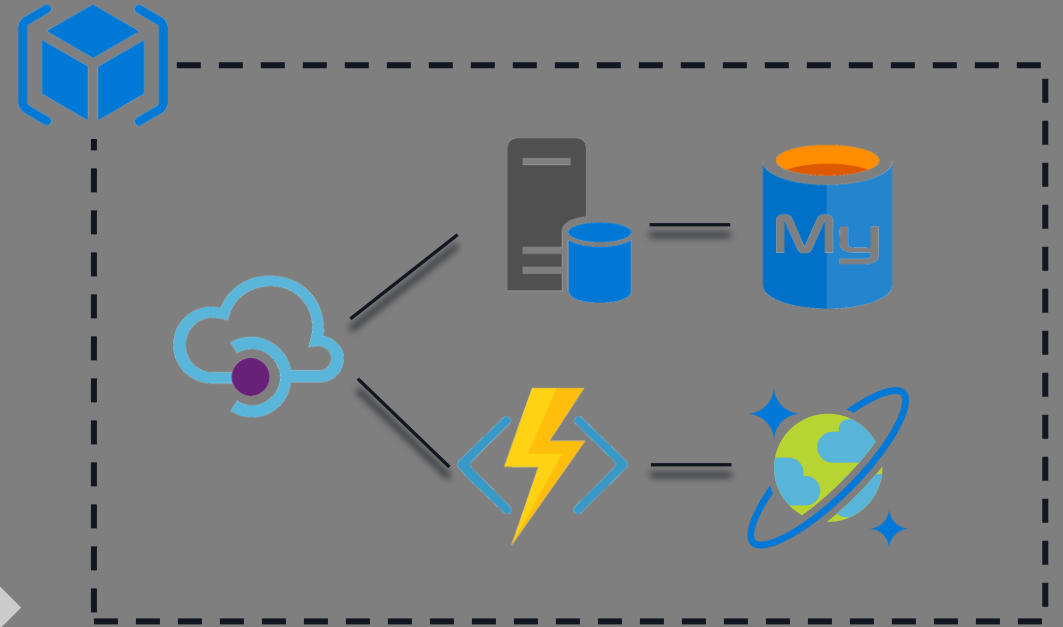
# The case for Infrastructure as Code



## FROM CODE

```
resource storage 'Microsoft.Storage/  
  → storageAccounts@2021-02-01' = {  
  name: 'storageDemo456'  
  kind: 'StorageV2'  
  location: 'west europe'  
  sku: {  
    name: 'Standard_LRS'  
    tier: 'Standard'  
  }  
}
```

## TO RESOURCES



No more configuration drift

Fast environment creation

Repeatability

Human readable & reviewable. Allows for reviews, change management, 4-eyes, sign-offs

All this makes that it neatly integrates with DevOps and CI/CD practices

~~ARM Templates~~  
Bicep Templates



# An ARM Template

```
{
  "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
  "contentVersion": "1.0.0.0",
  "resources": [
    {
      "type": "Microsoft.Storage/storageAccounts",
      "apiVersion": "2021-02-01",
      "name": "storageDemo456",
      "kind": "StorageV2",
      "location": "west europe",
      "sku": {
        "name": "Standard_LRS",
        "tier": "Standard"
      }
    }
  ]
}
```



# Why Bicep

ARM Templates were JSON, which...

- Resulted in very verbose declarations
- Noisy templates with quotes, comma's, etc
- Resulted in quirky solutions for some problems
- Became hard to read, when templates grew

Bicep is a full DSL, meaning

- Specific syntax for specific problems
- Denser
- Much easier to read

# A Bicep Equivalent

```
resource referenceName 'Microsoft.Storage/storageAccounts@2021-02-01' = {  
  name: 'storageDemo456'  
  kind: 'StorageV2'  
  location: 'west europe'  
  sku: {  
    name: 'Standard_LRS'  
    tier: 'Standard'  
  }  
}
```

# Deploying a resource

```
bicep build <bicepFile>
```

```
az group create <resourceGroupName>
```

```
az deployment group create  
    --resource-group <resourceGroupName>  
    --template-file <armTemplateFile>
```

# Deploying a resource

~~bicep build <bicepFile>~~

(az bicep build --files to compile only)

az group create <resourceGroupName>

az deployment group create

    --resource-group <resourceGroupName>

    --template-file <arm**OrBicep**TemplateFile>



MORE DEMOS,  
*PLEASE!*

SPEED:  
120

# Syntax recap

Variables      `var <name> = <value>`

Parameters    `param <name> <type> [ = <defaultvalue> ]`

Outputs        `output <name> <type> = <value>`

Functions      `<functionName>()`

References

# Reuse and control flow

Modules (module)

Loops (for)

Conditionals (if)

Loops and conditionals can conflict with properties  
like repeatable outcomes



# DO TRY THIS **AT HOME!**

**HENRY BEEN**

**Independent Devops & Azure Architect**

**E: [henry@azurespecialist.nl](mailto:henry@azurespecialist.nl)**

**T: [@henry\\_been](https://twitter.com/henry_been)**

**L: [linkedin.com/in/henrybeen](https://www.linkedin.com/in/henrybeen)**

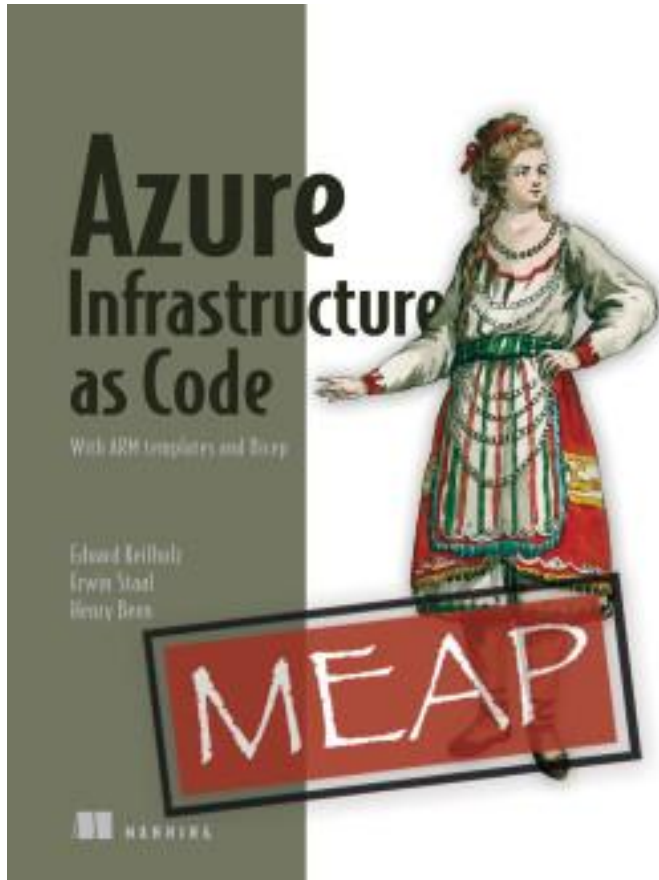
**W: [henrybeen.nl](http://henrybeen.nl)**



# Questions?



Any Questions?



## Azure Infrastructure as Code

- ARM Templates
- Azure BicepLang
- Template Specs
- Deployment Spec
- Azure Policy

In early access, and with 35% off using the code **au35bee**

A photograph of a white CRT computer monitor lying on its side on a grey surface. The screen is shattered with several large cracks. A wooden baseball bat is positioned diagonally across the top left of the monitor. The background is a plain, light-colored wall.

# DO TRY THIS **AT HOME!**

**HENRY BEEN**

**Independent Devops & Azure Architect**

**E: [henry@azurespecialist.nl](mailto:henry@azurespecialist.nl)**

**T: [@henry\\_been](https://twitter.com/henry_been)**

**L: [linkedin.com/in/henrybeen](https://www.linkedin.com/in/henrybeen)**

**W: [henrybeen.nl](http://henrybeen.nl)**