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## Getting started with Azure Infrastructure as Code with Bicep and Terraform

May 11th 2023 | Sarpsborg

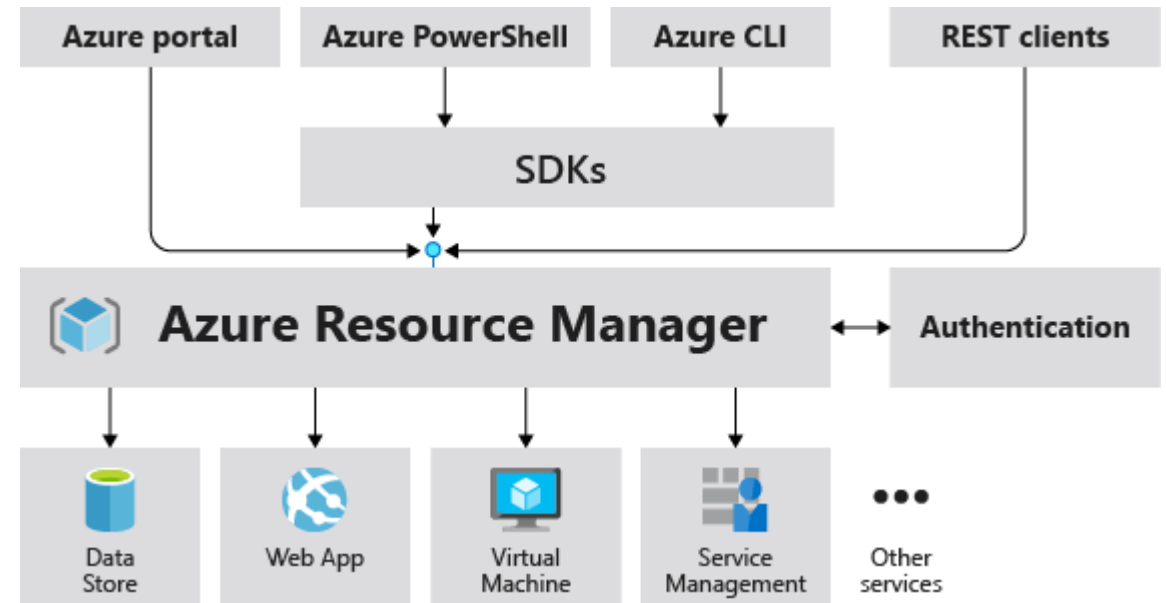
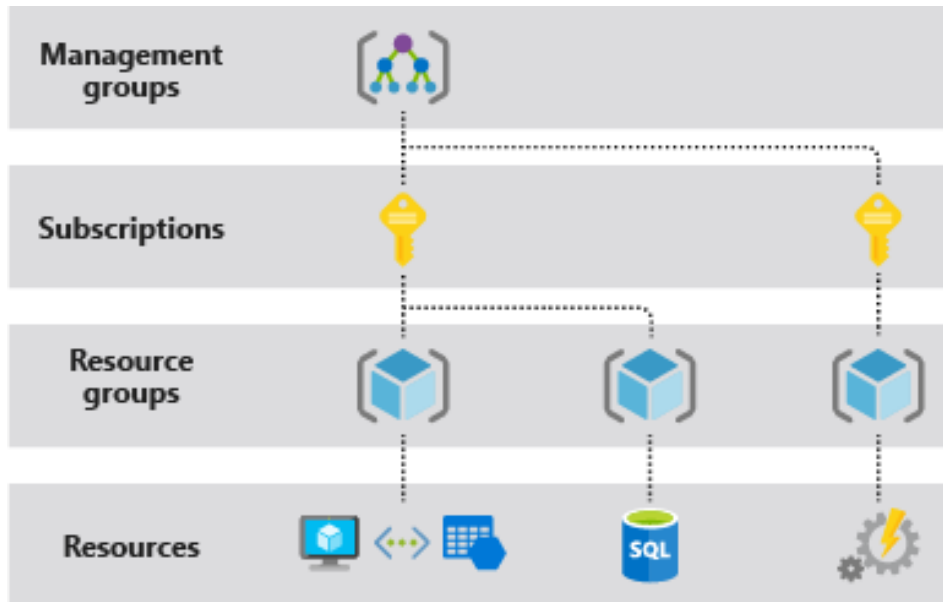


# IaC | What is Infrastructure as Code?

- Azure deployment options
  - Azure portal
  - Azure CLI
  - Azure PowerShell
  - Azure Resource Manager templates (ARM JSON)
- IaC => Automating Infrastructure deployments
  - Deploy with confidence
  - Multiple environments
  - Document, audit & understand
- Declarative vs. Imperative

# ARM | Azure Resource Manager

- Deploy and manage resources in Azure
- ARM template (JSON)





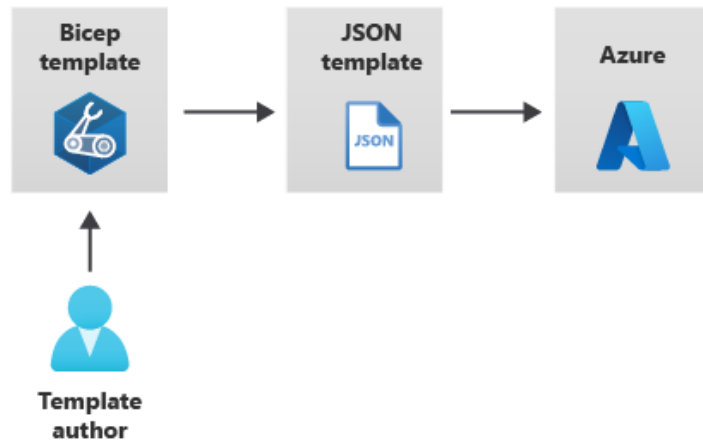
# Bicep | Terraform



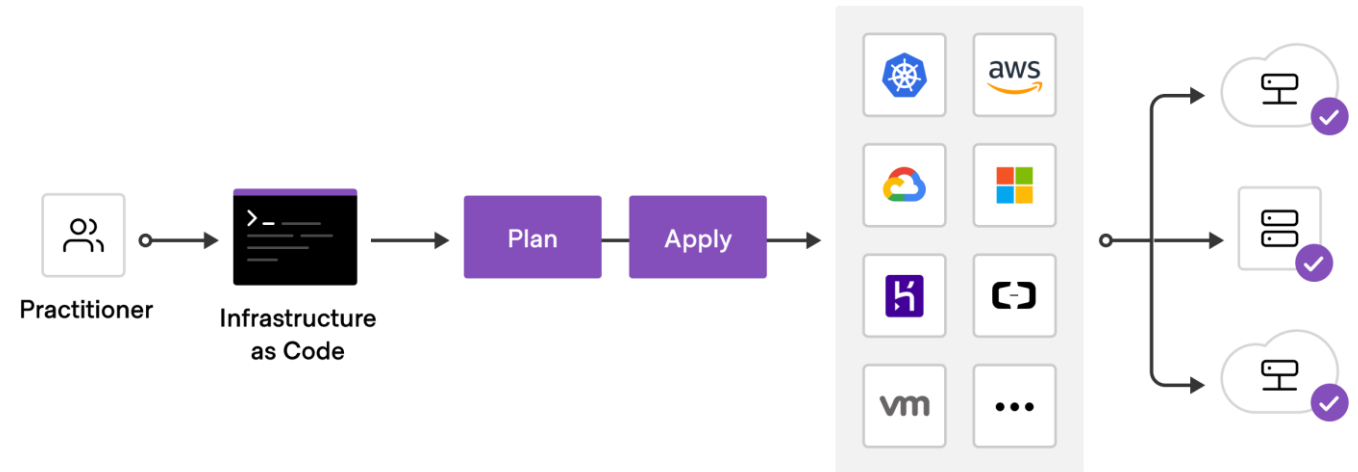
- Bicep = ARM abstraction layer
- Domain Specific Language
- Azure-native
- Azure integration
- Azure support
- No state management
- Easy transition from/to JSON
- Open-Source HashiCorp Configuration Language
- Multi-cloud
- Providers
  - AzureRM
  - AzureAD
  - AzureDevOps
  - AzAPI
  - AzureStack
  - ...and many more
- State management

# How to do Deployments

## Bicep



## Terraform



# Deployment Tools

## Local Deployment

- Az CLI
- Az PowerShell
- Visual Studio Code (\*)
- + Bicep | Terraform CLI
- + VSCode extensions

## CI/CD

- Azure DevOps Pipelines
- GitHub Actions

(\*) Any terminal can be used, but VSCode recommended for language support

# Get Started with Terraform

- Install Terraform



## HashiCorp Terraform v2.26.0

HashiCorp  [hashicorp.com](https://hashicorp.com) |  2,741,988 |      (169)

Syntax highlighting and autocompletion for Terraform

Disable



Uninstall



Switch to Pre-Release Version



This extension is enabled globally.

- <https://developer.hashicorp.com/terraform/downloads>

# Terraform Demo

<https://github.com/AUGNorway/Meetups/blob/master/Global%20Azure%202023/Sarpsborg/>



# Get started with Bicep

- Install with Az CLI
  - Remember Path!
- Other install options
  - Windows
    - Install with executable
    - Winget
    - Chocolatey
  - Mac
    - Homebrew
    - Bash
  - Linux
    - Bash



**Bicep** v0.17.1

Microsoft  [microsoft.com](https://microsoft.com) |  577,942 |  (22)

Bicep language support for Visual Studio Code

[Disable](#)  [Uninstall](#)   

This extension is enabled globally.

# Bicep Demo

<https://github.com/AUGNorway/Meetups/blob/master/Global%20Azure%202023/Sarpsborg/>

# Learn & Resources

- Microsoft Learn
  - <https://learn.microsoft.com/nb-no/training/paths/fundamentals-bicep/>
- Bicep Playground
  - <https://aka.ms/bicepdemo/>
- TerraForm on Azure Documentation
  - <https://learn.microsoft.com/en-us/azure/developer/terraform/>