Course Title

Description

Learning objectives

Preview image

Preview video

TODO

Watch existing videos on YouTube for recording ideas

Look into better microphone

Make fun and exciting intro video

Mac

deployment steps

az login

az deployment group create --subscription udemy-courses --resource-group bicep-course --name deployment --template-file main.bicep

**--mode**

9f53062f-e565-443b-8eb8-63aeb88dc7fd

Software

Kap

Quicktime

**Screenium – paid**

handbrake app – converting videos

Equipment

Data types??

Deploying resource groups, deployment scopes Where should I show them deploying resource groups?

Resource scopes

Parents

Union

String functions

Arrays, default values

Variable array for container names?

Dependencies – implicit, explicit, Visualize dependencies

**Lesson 1: Introduction to Azure Bicep**

**Lesson 2: Creating your first Azure Bicep template**

**Lesson 3: Deploying resources with Azure Bicep**

**Lesson 4: Variables, parameters and outputs**

**Lesson 5: Bicep functions**

**Lesson 6: Working with modules in Azure Bicep**

**Lesson 7: Advanced Bicep concepts (loops, conditional deployments, existing resources)**

**Lesson 8: Advanced Bicep functions (files, dates, lambdas)**

**Lesson 9: Testing and validating Azure Bicep templates**

**Lesson 10: Troubleshooting Azure Bicep deployments**

**Lesson 11: Real-world Project – deploying a function app with logging**

**Lesson 12: Preview features**

**Lesson 1: Introduction to Azure Bicep**

* What is Infrastructure as Code (IaC)? Why use IaC?
* What is ARM?
* Introduction to Bicep
* Why use Bicep over other IaC tools?
* Terraform vs bicep
  + consistency in configurations across environments, no more ‘snowflake’ configurations
  + reduced human error in deployments
  + increased productivity of speed of changes
  + prevents environments contention with ability to dynamically create new infra
* Setting up the environment for Bicep
* VS code, bicep extension
* 



Windows

<https://learn.microsoft.com/en-us/cli/azure/install-azure-cli-windows?tabs=azure-cli>

Mac

brew install azure-cli

az bicep install

**Lesson 2: Creating your first Azure Bicep template**

* Create your first Bicep file
* Converting bicep file to ARM template

**Lesson 3: Deploying resources with Azure Bicep**

* Overview of deployment options Azure CLI, PowerShell, Azure DevOps, etc.)
* Deployment of Bicep files with Azure CLI
* Deployment of Bicep files with PowerShell
* Integrating Bicep deployments of Bicep files with Azure DevOps Pipelines
  + <https://dev.azure.com/dylanbudgen/udemy-courses/_build/results?buildId=2&view=logs&j=12f1170f-54f2-53f3-20dd-22fc7dff55f9>
* What are deployment modes?
  + Validation, Incremental, Complete

**Lesson 4: Variables, parameters and outputs**

* Using variables in Bicep
* Using parameters in Bicep
  + Lower camel case
* Using outputs in Bicep
* Data types

**Lesson 5: Bicep functions**

* Introduction to Bicep functions
* Commonly used Bicep functions
  + Data type conversions?
  + Scope functions
  + Resource functions
  + Guid functions
  + Array functions
  + String functions
  + Numeric functions

**Lesson 6: Working with modules in Azure Bicep**

* What are Bicep modules?
* How to create and use Bicep modules.
  + Storage account, create one manually, then change to module
  + Explain that it creates new deployment
  + Explain the name different module and resource

**Lesson 7: Advanced Bicep concepts (loops, conditional deployments, existing resources)**

* Nested resources in Bicep
  + creation of single container in storage account module
* Loops in Bicep
  + Creating array of containers (follow up from parents)
* Explore different types of loops?
* Working with existing resources
  + role assignments (also show them with a different RG)
  + introduce with a single role assignment, then add loop for complex loops
* Managing dependencies in Bicep
  + RBAC module being run after the storage accounts deployed
  + Modules vs resources – show this by creating a storage account without the module
  + Dependency management with resources and modules
  + Implicit vs explicit (explicit is discouraged)
* Conditional deployments in Bicep
  + audit storage account with Boolean param
* Ternary operators in Bicep
  + The conditional deployment will need a local variable for storage account names in the RBAC module – follow up from last module
* **Logical operators**

**Lesson 8 – Advanced Bicep functions (files, dates, lambdas)**

* Date functions
* Lambda functions
* File functions

**LESSON 7 HAS CHANGED LOTS – MAYBE UPDATE THE REST**

**Lesson 9: Testing and validating Azure Bicep templates**

* Validating Bicep using Azure CLI
  + Using linter in vs code
  + Az bicep build
    - Reports warnings
* Testing Bicep and ARM templates
  + Arm-ttk (doesn’t look very simple)
  + Installation and running tests
  + Mention API versions and why you would wantto skip tests

**Lesson 10: Troubleshooting Azure Bicep deployments**

* Debugging Bicep deployments and troubleshooting common issues
* Understanding deployment logs and error messages
  + Template validation (predeployment) - Storage account wrong length
  + Runtime failure – invalid value for minimumTlsVersion
  + Mention that nested resources sometimes don’t produce good results, look at deployment logs
* Validating Bicep with Azure DevOps Pipelines
  + <https://dev.azure.com/dylanbudgen/udemy-courses/_build/results?buildId=2&view=logs&j=12f1170f-54f2-53f3-20dd-22fc7dff55f9>

**Lesson 10: Best Practices and Tips – SHOULD I INCLUDE THIS?**

* Bicep best practices
* Tips for writing efficient Bicep templates
* https://learn.microsoft.com/en-us/azure/azure-resource-manager/bicep/best-practices

**Lesson 11: Real-world project – deploying a function app**

* Building a real-world infrastructure setup using Bicep
  + Deploy using pipeline with variables?
* Think of how I can use advanced topics
  + Type the compute module with the wrong type of dependencies values, then correct it
  + Also show them that storageAccount.name is the deployment name

**Lesson 12: Preview features**

* Import for k8s
  + <https://learn.microsoft.com/en-us/azure/azure-resource-manager/bicep/bicep-import-providers>
* Object types

**Lesson 11: Review and Next Steps**

Review of the course

Next steps for learning more about Bicep and IaC