

Introduction to CloudFormation

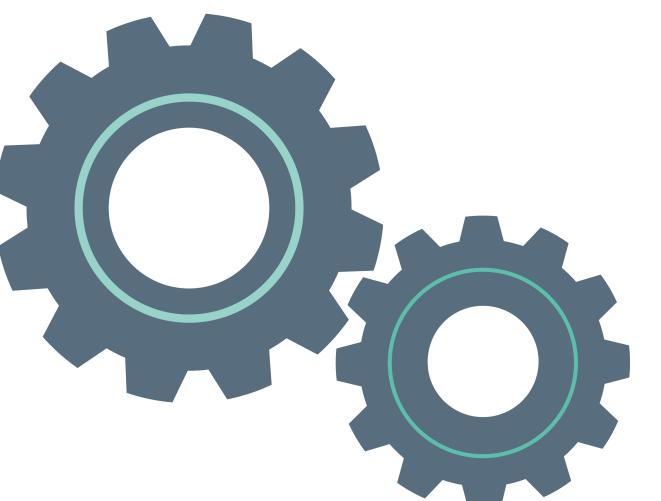


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Introduction To CloudFormation

- CloudFormation is a service that allows you to manage, configure and provision your AWS infrastructure as code.
- Resources are defined using a CloudFormation template
- CloudFormation interprets the template and makes the appropriate API calls to create the resources you have defined
- Supports YAML or JSON



CloudFormation Benefits

- Infrastructure is provisioned consistently, with fewer mistakes
- Less time and effort than configuring things manually
- You can version control and peer review your templates
- Free to use (charged for what you create)
- Can be used to manage updates & dependencies
- Can be used to rollback and delete the entire stack as well



CloudFormation Template



- YAML or JSON template used to describe the endstate of the infrastructure you are either provisioning or changing
- After creating the template, you upload it to CloudFormation using S3
- CloudFormation reads the template and makes the API calls on your behalf
- The resulting resources are called a Stack





CloudFormation Template Structure (YAML)

AWSTemplateFormatVersion: "2010-09-09"

Description: "Template to create an EC2 instance"

Metadata:

Instances:

Description: "Web Server Instance"

Parameters: #input values

EnvType:

Description: "Environment type"

Type: String

AllowedValues:

- prod

- test

Conditions:

CreateProdResources: !Equals [!Ref EnvType, prod]



CloudFormation Template Structure (YAML)

Mappings: #e.g. set values based on a region

RegionMap:

eu-west-1:

"ami": "ami-Obdb1d6c15a40392c"

Transform: # include snippets of code outside the main template

Name: 'AWS::Include'

Parameters:

Location: 's3://MyAmazonS3BucketName/MyFileName.yaml'

Resources: # the AWS resources you are deploying

EC2Instance:

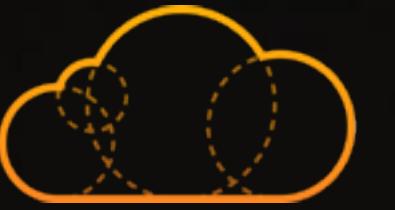
Type: AWS::EC2::Instance

Properties:

InstanceType: t2.micro

ImageId: ami-Obdb1d6c15a40392c

CloudFormation Template Structure (YAML)



Outputs:

InstanceID:

Description: The Instance ID

Value: !Ref EC2Instance

- Resources is the only mandatory section of the CloudFormation template
- Remember that the **Transform** section is used to reference additional code stored in S3, allowing for code re-use, e.g. for Lambda code or template snippets / reusable pieces of CloudFormation code

CloudFormation Exam Tips

- CloudFormation allows you to manage, configure and provision AWS infrastructure as code. (YAML / JSON)
- Remember the main sections in the Cloud Formation Template:
 - Parameters - input custom values
 - Conditions - e.g. provision resources based on environment
 - Resources - mandatory - the AWS resources to create
 - Mappings - create custom mappings like Region : AMI
 - Transforms - reference code located in S3 e.g. Lambda code or reusable snippets of CloudFormation code