



CloudFormation

CloudFormation

IAC (Infra As Code)



CloudFormation

Terminology

Templates



- Text File - YAML or JSON
- Cloudformation read template as an Input
- Describe state of the Infra

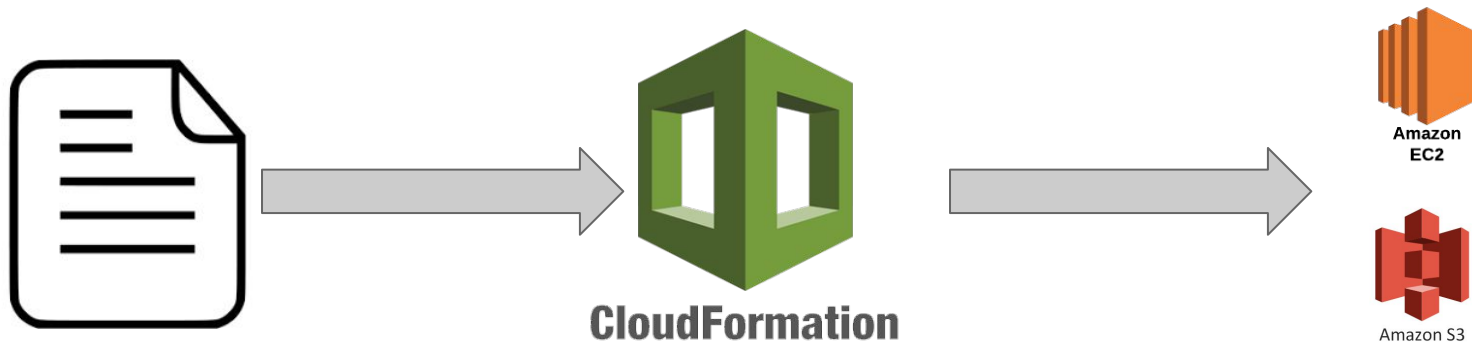


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Stack



- Cloudformation reads Template and create **Stack**
- We update template and update stack to make changes
- Set of **resources** as a single Unit.



Change Set

- Before updating a stack, you can generate a change set.
- A change set allows you to see how changes will impact your **Existing** resources.
- Very important for live systems.

E:g Renaming an RDS instance will

- Create a new one
- Delete the old one

Result: Data Loss



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Template Anatomy

Templates (JSON)

```
{  
  "AWSTemplateFormatVersion": "version date",  
  "Description": "String",  
  "Metadata": "template metadata",  
  "Parameters": {set of parameters},  
  "Mappings": {set of mappings},  
  "Conditions": {set of conditions},  
  "Transform" : {set of transforms},  
  "Resources" : {set of resources}  
  "Outputs"    : {set of outputs }  
}
```

Templates (YAML)

AWSTemplateFormatVersion: *"version date"*

Description:

String

Metadata:

template metadata

Parameters:

set of parameters

Mappings:

set of mappings

Conditions:


set of conditions

Templates (YAML)

Transform:

 *set of transforms*

Resources:

 *set of resources*

Outputs:

 *set of outputs*



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Resources (JSON)

```
{
  "Resources": {
    "Logical ID" : {
      "Type" : "Resource type",
      "Properties": {
        ... set of properties ..
      }
    }
  }
}
```

Resources (YAML)

Resources:

Logical ID :

Type : Resource type

Properties:

... set of properties ..



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Resources (JSON)

```
{
  "Resources": {
    "MyFirstInstance" : {
      "Type" : "AWS::EC2::Instance",
      "Properties": {
        "ImageId": "ami-6789231"
        "InstanceType" : "t2.micro"
      }
    }
  }
}
```

Resources (YAML)

Resources:

MyFirstInstance:

Type : "AWS::EC2::Instance"

Properties:

ImageId: "ami-6789231"

InstanceType : t2.micro

Resources (YAML)

Resources:

MyS3Bucket:

Type : "AWS::S3::Bucket"

Properties:

BucketName: chammomile

AccessControl: PublicRead

WebsiteConfiguration:

IndexDocument: index.html

Resources (YAML)

Resources:

MySG:

Type: AWS::EC2::SecurityGroup

Properties:

GroupDescription: String

GroupName: String

SecurityGroupIngress:

- **IpProtocol:** tcp

- FromPort:** 22

- ToPort:** 22

- CidrIp:** 0.0.0.0/0