



Introduction to CloudFormation

What is CloudFormation?

- Create-Delete-Modify one or few AWS resources
 - Easy ✓
- Hundreds ?





► Introduction to CloudFormation

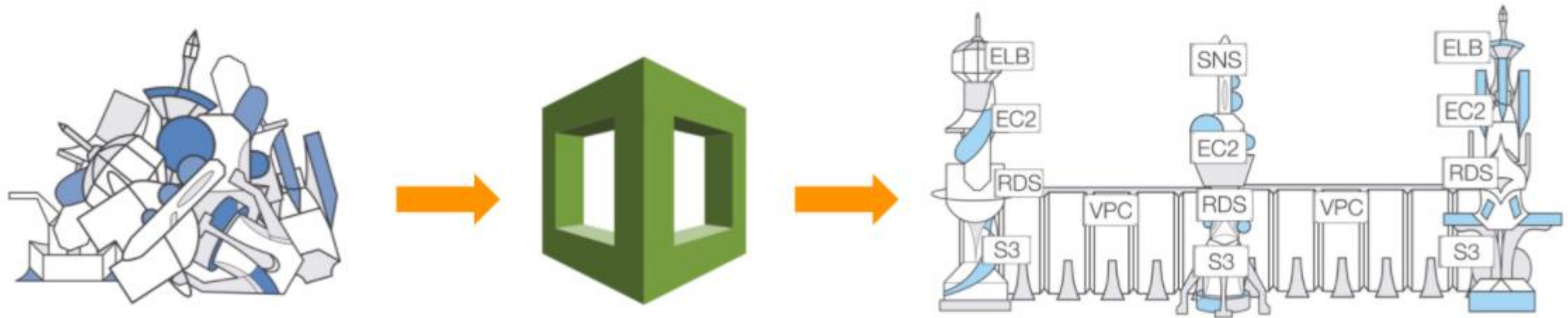
What is CloudFormation?



- **CloudFormation** is an **AWS service** which enables you to create, manage, configure, replicate and delete **AWS resources** easily and rapidly using **templates**.

Introduction to CloudFormation

What is CloudFormation?

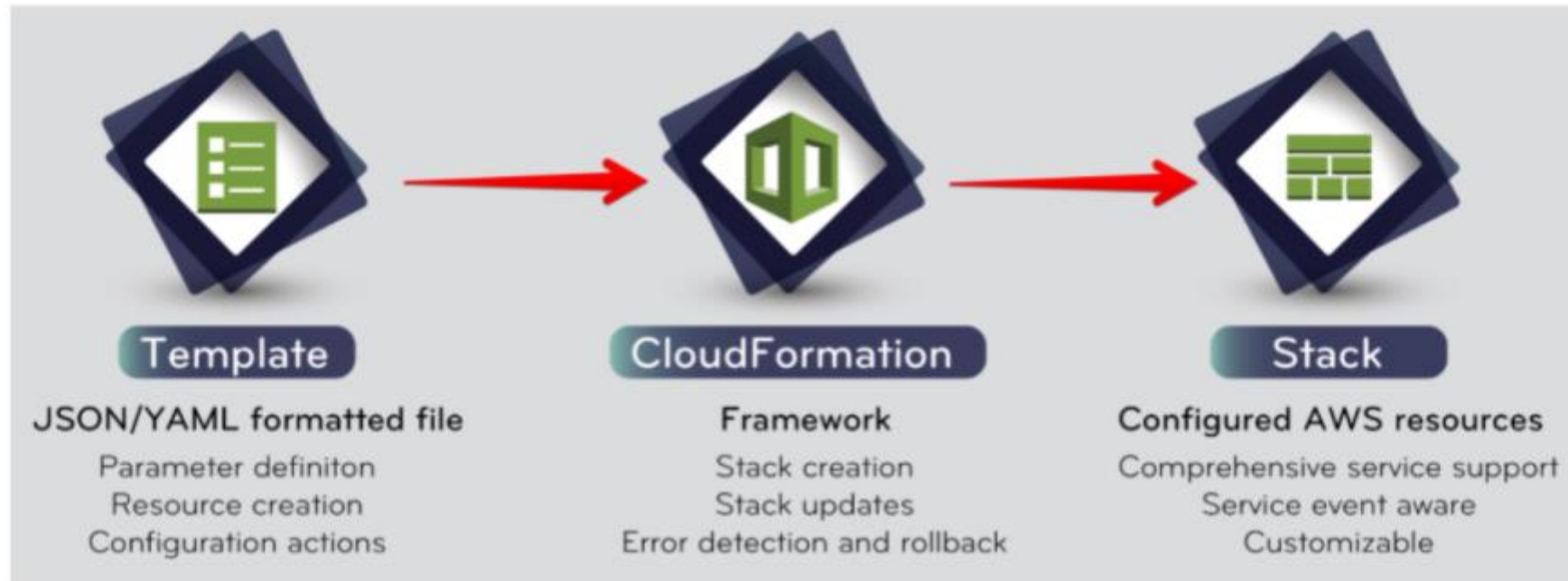


- **Provisions** and **manages** stacks of AWS resources based on **templates** you create to model your infrastructure architecture.



► Introduction to CloudFormation

Templates and Stacks



- **Templates** and **Stacks** are the main components of AWS CloudFormation.



► Introduction to CloudFormation

Pricing



- You **don't pay** for using **AWS CloudFormation**.
- You **pay** for the **resources you use**.



▶ Templates

What is a Template?

```
{
  "AWSTemplateFormatVersion" : "2010-09-09",
  "Description" : "A simple EC2 instance",
  "Resources" : {
    "MyEC2Instance" : {
      "Type" : "AWS::EC2::Instance",
      "Properties" : {
        "ImageId" : "ami-0ff8a91507f77f867",
        "InstanceType" : "t1.micro"
      }
    }
  }
}
```

- A template is a **JSON** or **YAML** formatted text file which you specify the AWS resources you want to create.



► Templates

What is a Template?

- You create resources, define the parameters and configure your settings with templates.
- Templates can have the extensions `.json`, `.yaml`, `.yml`, `.template`, or `.txt`.



Templates

Structure

- Template Version
- Description
- Metadata
- Parameters
- Mappings
- Conditions
- Transform
- Resources
- Outputs

```
{
  "AWSTemplateFormatVersion" : "version date",

  "Description" : "JSON 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
  }
}
```


Stacks

What is a Stack?

- A stack is a single unit **composed of the AWS resources** provisioned by CloudFormation.
- All of the resources in a **stack** are defined and configured by the **related template**.

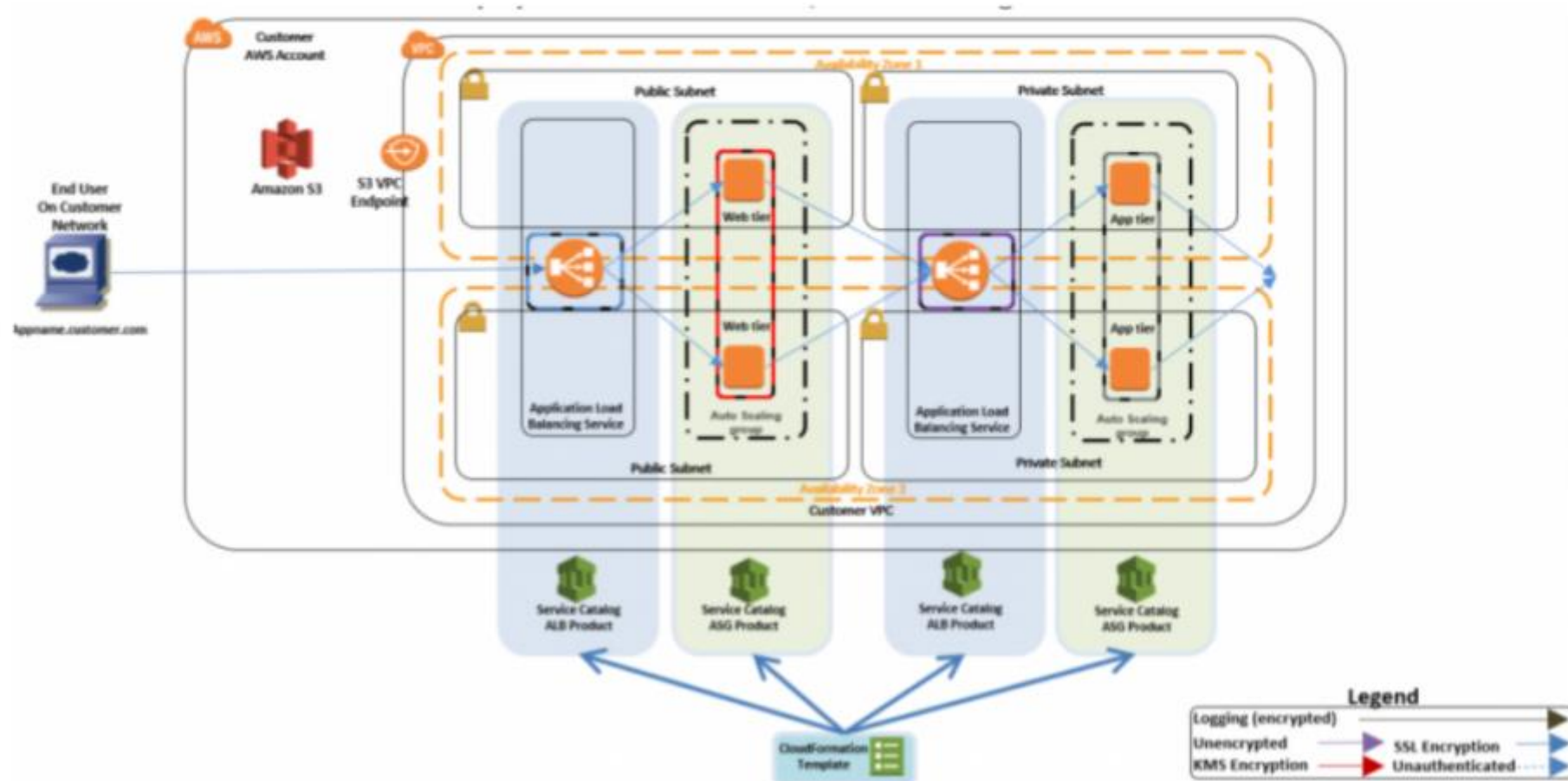




Stacks

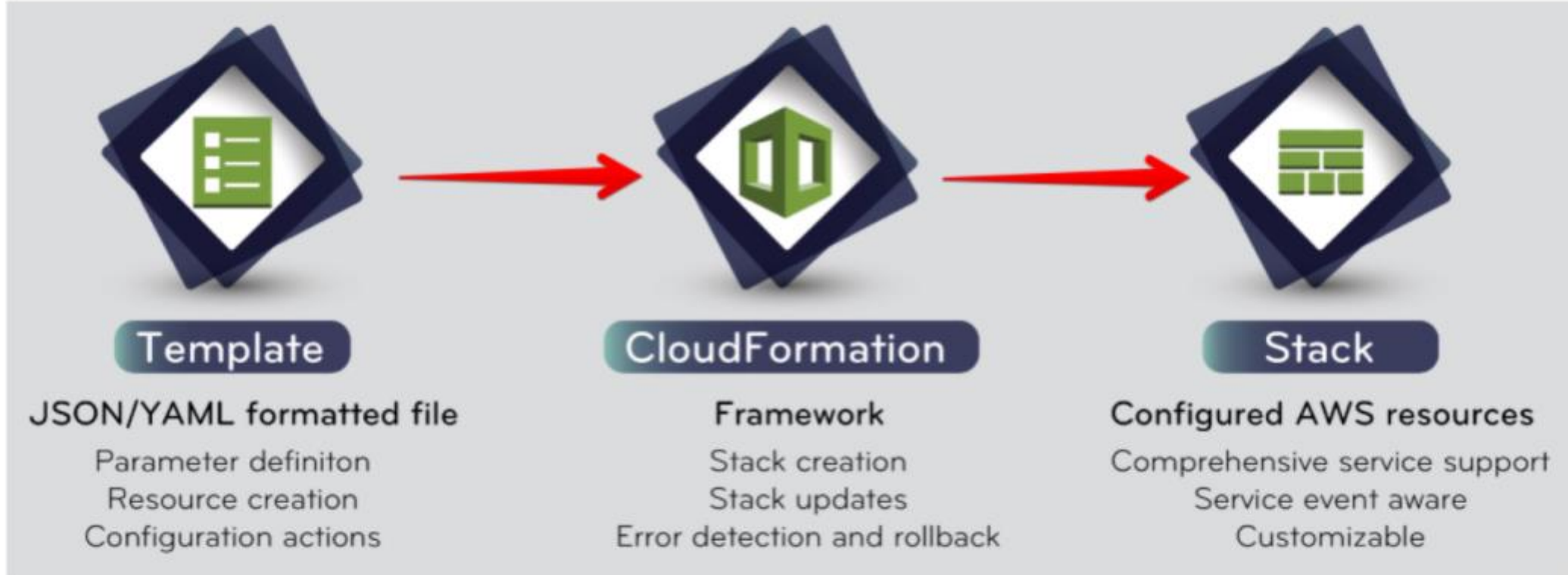
What is a Stack?

- A stack can be either **a single EC2 instance** or **a very complex VPC**.



► CloudFormation's Working Process

How does it work?



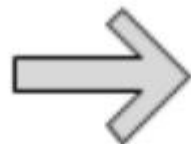


► CloudFormation's Working Process

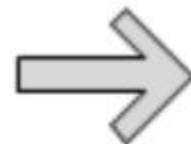
How does it work?



1 Create or use an existing template



2 Save locally or in S3 bucket



3 Use AWS CloudFormation to create a stack based on your template. It constructs and configures your stack resources.