

Transparent and open

video

Don't reinvent the wheel

Declarative and flexible



# AWS CloudFormation

No extra charge

Customizable (parameters)

Integration ready

**AWS CloudFormation is an  
Infrastructure as Code  
(IaC) service that lets you  
define, provision, and  
manage AWS resources in a  
declarative, template-  
based format.**



Resources:

SimpleEC2Instance:

Type: "AWS::EC2::Instance"

Properties:

InstanceType: t3.micro

ImageId: ami-02db68a01488594c5 # AMI ID for your region

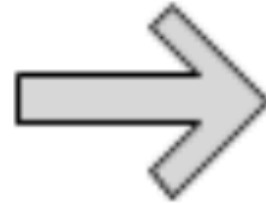
Tags:

– Key: Name

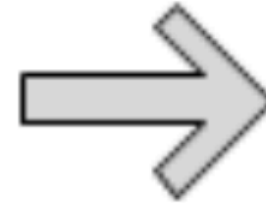
Value: MySimpleInstance



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.



Code in YAML or JSON  
directly or use sample  
templates

Upload local files or  
from an S3 bucket

Create stack  
using API via AWS  
CloudFormation

Stacks and resources are  
provisioned as a running  
environment

- **"Consistency: Define infrastructure in code"**
- **"Automation: Reduce manual work"**
- **"Repeatable: Replicate environments easily"**

- **Infrastructure as Code (IaC) Tool:** Automates the creation, management, and updating of AWS infrastructure.
- **Declarative Language:** Users define desired end states for resources, and CloudFormation handles provisioning.
- **Template-Based:** Uses YAML or JSON templates to specify AWS resources and configurations.
- **AWS Native:** Exclusively supports AWS resources, fully integrated with AWS services.

- **State Management:** Manages state internally, eliminating the need for separate state files.
- **Stacks and Stack Sets:** Organizes resources in stacks for easier management and allows for multi-account and region deployments with stack sets.
- **Cost-Free Tool:** CloudFormation itself is free; you only pay for the AWS resources created.
- **Drift Detection:** Identifies and reports on resource changes made outside of CloudFormation to ensure resources stay aligned with the template.



## Usecases:

- **Create EC2 Instances with Security Groups and Elastic IPs**
- **Provision S3 Buckets with HTTP Endpoints**
- **Set Up VPCs with Subnets and Route Tables**
- **Create RDS Databases with Automatic Backups**
- **Deploy Lambda Functions with API Gateway Integrations**
- **Set Up Elastic Load Balancers and Auto Scaling for Web Applications**
- **Deploy IAM Roles, Policies, and User Access Management**

```
aws cloudformation create-stack --stack-name  
  MyStackName --template-body  
  file:///path/to/template.yaml
```

---

Resources:

SimpleEC2Instance:

Type: "AWS::EC2::Instance"

Properties:

InstanceType: t3.micro

ImageId: ami-02db68a01488594c5

Tags:

- Key: Name

Value: MySimpleInstance

<https://docs.aws.amazon.com/cloudformation/>