

# INFOSOFT IT SOLUTIONS

**Training | Projects | Placements**

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## CloudFormation

### **Introduction to AWS CloudFormation**

- Overview of AWS CloudFormation
- Benefits of using CloudFormation for infrastructure management
- CloudFormation vs. traditional infrastructure provisioning methods

### **Getting Started with CloudFormation**

- Setting up AWS account and IAM permissions for CloudFormation
- Understanding CloudFormation templates (YAML/JSON format)
- AWS CloudFormation Designer overview

### **CloudFormation Concepts and Components**

- Stack architecture and components
- Resources, Parameters, Mappings, Outputs, and Conditions
- Intrinsic functions (Fn::, Ref, Fn::GetAtt, etc.)
- Pseudo parameters and mappings

## **CloudFormation Template Structure and Syntax**

- Anatomy of a CloudFormation template
- Template sections (Parameters, Resources, Outputs, etc.)
- Best practices for writing CloudFormation templates
- Using conditions and loops in templates

## **Working with AWS Resources**

- Provisioning AWS resources using CloudFormation
- Supported AWS resource types (EC2 instances, RDS databases, S3 buckets, etc.)
- Managing dependencies between resources
- Resource attributes and metadata

## **Parameters and Input Values**

- Using Parameters to customize stack deployments
- Handling input validation with Parameters
- Default values and dynamic input options

## **Outputs and Exporting Values**

- Defining Outputs in CloudFormation templates
- Exporting Outputs for cross-stack referencing
- Using exported values in other stacks

## **Intrinsic Functions and Conditionals**

- Overview of CloudFormation intrinsic functions (Fn::, Ref, Fn::GetAtt, etc.)
- Using Conditions to control resource creation
- Handling dynamic resource properties with functions

## **Stack Updates and Rollbacks**

- Updating stacks with CloudFormation
- Handling updates to resources (add, modify, delete)
- Rollback behaviors and troubleshooting updates

## **CloudFormation Stack Policies**

- Understanding Stack Policies
- Implementing stack policies to control updates
- Best practices for using stack policies effectively

## **Advanced CloudFormation Features**

- Nested stacks and stack composition
- Cross-stack references and importing/exporting values
- AWS CloudFormation Guard (CFN Guard) for policy enforcement

## **CloudFormation and Infrastructure as Code (IaC)**

- Integrating CloudFormation with DevOps pipelines
- Using CloudFormation with AWS CodePipeline and AWS CodeDeploy
- Infrastructure testing and validation with CloudFormation

## **CloudFormation StackSets**

- Overview of AWS CloudFormation StackSets
- Managing resources across multiple AWS accounts and regions
- Benefits and considerations of using StackSets

## **CloudFormation Security and Best Practices**

- Security considerations in CloudFormation templates
- IAM roles and policies for CloudFormation stack operations
- Best practices for secure and efficient template design

## **Troubleshooting CloudFormation**

- Common issues and errors in CloudFormation deployments
- Tools and techniques for troubleshooting CloudFormation stacks
- AWS CloudFormation console and CLI debugging

## **Hands-on Labs and Projects**

- Practical exercises and labs to create, update, and manage CloudFormation stacks
- Building complex infrastructures using CloudFormation templates

## **Additional Resources**