

**AWS CDK Fundamentals**

**Course Number:** AWS-192WA
**Duration:** 1 day

**Overview**

The AWS Cloud Development Kit (CDK) is an open-source framework for defining cloud infrastructure using popular programming languages like TypeScript, JavaScript, Python, Java, C#, and Go. This course introduces participants to the core concepts of CDK and teaches them to model, deploy, and manage cloud resources effectively. Participants learn to leverage CDK to create reusable infrastructure code and embrace modern Infrastructure as Code (IaC) practices. This class uses the Python programming language.

**Prerequisites**

All participants must have a fundamental knowledge of AWS Cloud and Python.

**Materials**

All CDK training attendees receive comprehensive courseware.

**Software Needed on Each Student PC**

Attendees will not need to install any software on their computers for this class. The class will be conducted in a remote environment that Accelebrate will provide; students will only need a local computer with a web browser and a stable Internet connection. Any recent version of Microsoft Edge, Mozilla Firefox, or Google Chrome will work well.

**Objectives**

* Understand the foundational principles of AWS CDK and its purpose
* Define and deploy AWS infrastructure using CDK
* Understand CDK constructs, stacks, and app structures
* Troubleshoot common CDK deployment issues

**Outline**

* Introduction to CDK
	+ What is the AWS CDK?
	+ Supported programming languages and prerequisites
	+ Key components: constructs, stacks, and apps
* CDK Basics
	+ Bootstrapping a CDK project
	+ Defining a basic stack
	+ Synthesizing CloudFormation templates with cdk synth
	+ Deploying stacks with cdk deploy
* Working with Constructs
	+ L1 (low-level): CloudFormation resources
	+ L2 (high-level): Simplified resources
	+ L3 (patterns): Complex, reusable patterns
* Reusability and Best Practices
	+ Organizing constructs into reusable patterns
	+ Using context variables and environment configuration
	+ Understanding CDK Pipelines for CI/CD integration
* Advanced Topics and Troubleshooting
	+ Exploring the CDK Toolkit (cdk diff, cdk destroy)
	+ Debugging deployment issues
	+ Understanding CDK dependencies and resource relationships
	+ Introducing CDK Aspects for cross-cutting concerns
* Conclusion