AWS CDK

Program Duration: 48 Hours

Prerequisites:
- Good knowledge on Python
- Good knowledge of Node.js
- Good Knowledge regarding core AWS services such as compute, storage, networking, database etc
- AWS-CLI has a lot to be done at CLI side so participants must have working knowledge for AWS-CLI
- Any of the IDE such as vscode/pycharm

Course Content:

Day 1
- AWS overview
- Identity Access Management of AWS
- Getting Started: AWS CDK Prerequisites & Installation
- Create your first CDK Stack & Deploy it
- Create IAM Users, Groups, IAM Role, Inline & Managed Policy

Day 2
- Object Storage in Cloud
- IAM Resource Policy: S3 Bucket Policy
- EC2 Instance and Auto-scaling
- Load Balancing
- EBS (Elastic Block Storage)

Day 3
- Customize EC2 Instances by Bootstrapping them with user data
- Launch EC2 with Custom Instant Profile - SSM Agent Role - Login without SSH Keys
- Launch EC2 with latest AMI in any AWS Region - Portable Region Independent stack
- Improve EC2 Performance with EBS Provisioned IOPS SSD Volumes
- Highly Available Web Servers with Autoscaling & Application Load Balancer

Day 4
- Amazon Virtual Private Cloud (VPC)
- Build Multi-AZ Production Ready Custom VPC
- Add Tags to CDK Resources on Creation
- Tagging at Scale: Easily Add Tags to ALL Resources in the Stack
- Import Pre-Existing External Resources: S3, VPC

Day 5

- Relational Database Service (RDS)
- Secrets Manager
- Create AWS SSM Parameter & AWS Secrets
- Create RDS Database
- Import pre-existing Cloud formation templates into CDK

Day 6

- CloudWatch and CloudTrail
- CloudWatch Alarms: EC2, Lambda
- CloudWatch Custom Metrics, Filter Patterns & Alarms
- CloudWatch Live Dashboards & Widgets

Day 7

- Serverless Architecture
- Create & Deploy Serverless Application Resources
- Serverless: Create Lambda for Event Driven Architecture
- Create & Manage Lambda Log Groups
- Serverless: Lambda Source Assets from S3

Day 8

- Schedule your Lambda Function: Cron in the cloud
- Grant Least Privileges to your Lambda Functions
- API Gateway: An HTTP endpoint for your Lambda function
- SNS,SES and SQS
- Create SNS Topic & Subscriptions
- SQS: Fully Managed Message Queues for Microservices

Day 9

- Cloud Front
- Route53
- Deploy a static website with contents
- Reduce Latency and Protect your site with CloudFront

Day 10

- DynamoDB
- DynamoDB: Key-Value Database
- Serverless REST API Architecture: APIGW, Lambda & DynamoDB
- Serverless DynamoDB Event Processor Architecture with DynamoDB Streams

Day 11

- Build Advanced Use-Cases with CDK
- Serverless Event Processor Architecture with S3 Events
- AWS Fargate
- Run Containers without managing servers using Fargate
- Serverless Batch Job Architecture with Fargate

Day 12

- ECS and Kinesis
- Serverless Stream Processor Architecture with Kinesis

- Containerized Micro Service Architecture with ECS
- Build a chat application with CDK
- Serverless Containerized Chat Application