AWS CodeDeploy

Introduction

- AWS CodeDeploy is a fully managed deployment service that automates software deployments to a variety of compute services such as Amazon EC2, AWS Fargate, AWS Lambda, and your on-premises servers.
- AWS CodeDeploy makes it easier for you to rapidly release new features, helps you avoid downtime during application deployment, and handles the complexity of updating your applications.
- You can use AWS CodeDeploy to automate software deployments, eliminating the need for error-prone manual operations. The service scales to match your deployment needs.

AWS CodeDeploy - Features

- **Repeatable deployments:** You can easily repeat an application deployment across different groups of instances with AWS CodeDeploy.
- **Automatic scaling:** CodeDeploy integrates with Auto Scaling. CodeDeploy is notified whenever a new instance launches into an Auto Scaling group and will automatically perform an application deployment on the new instance before it is added to an Elastic Load Balancing load balancer

AWS CodeDeploy - Features

- **Monitoring and control:** You can set push notifications that allow you to monitor the status of your deployments via SMS or email messages through Amazon Simple Notification Service.
- **Deployment groups:** One application can be deployed to multiple deployment groups. Deployment groups are used to match configurations to specific environments, such as a staging or production environments. You can test a revision in staging and then deploy that same code with the same deployment instructions to production once you are satisfied.

AWS CodeDeploy - Features

- **Deployment history:** AWS CodeDeploy tracks and stores the recent history of your deployments. You can view which application versions are currently deployed to each of your target deployment groups.
- **Rolling and Blue/Green updates:** Applications do not require downtime when they're being upgraded to a new revision with AWS CodeDeploy. AWS CodeDeploy can perform blue/green deployments to Amazon EC2 instances, an Amazon ECS service or an AWS Lambda function.
- **Load Balancing:** AWS CodeDeploy now supports using Application Load Balancers for both blue/green and in-place deployments. You can choose between a Classic Load Balancer and an Application Load Balancer or Network Load Balancer for your deployment groups.

AWS Lambda deployments with AWS CodeDeploy

- AWS Lambda and AWS CodeDeploy recently made it possible to automatically shift incoming traffic between two function versions based on a preconfigured rollout strategy.
- This new feature allows you to gradually shift traffic to the new function. If there are any issues with the new code, you can quickly rollback and control the impact to your application.
- Previously, you had to manually move 100% of traffic from the old version to the new version. Now, you can have CodeDeploy automatically execute pre- or post-deployment tests and automate a gradual rollout strategy.

AWS CodeDeploy - Deployment Configurations

- **CodeDeployDefault.LambdaCanary10Percent5Minutes:** Shifts 10 percent of traffic in the first increment. The remaining 90 percent is deployed five minutes later.
- **CodeDeployDefault.LambdaCanary10Percent10Minutes:** Shifts 10 percent of traffic in the first increment. The remaining 90 percent is deployed 10 minutes later.
- **CodeDeployDefault.LambdaCanary10Percent15Minutes:** Shifts 10 percent of traffic in the first increment. The remaining 90 percent is deployed 15 minutes later.
- **CodeDeployDefault.LambdaCanary10Percent30Minutes:** Shifts 10 percent of traffic in the first increment. The remaining 90 percent is deployed 30 minutes later.

AWS CodeDeploy - Deployment Configurations

- **CodeDeployDefault.LambdaLinear10PercentEvery1Minute:** Shifts 10 percent of traffic every minute until all traffic is shifted.
- **CodeDeployDefault.LambdaLinear10PercentEvery2Minutes:** Shifts 10 percent of traffic every two minutes until all traffic is shifted.
- **CodeDeployDefault.LambdaLinear10PercentEvery3Minutes:** Shifts 10 percent of traffic every three minutes until all traffic is shifted.
- **CodeDeployDefault.LambdaLinear10PercentEvery10Minutes:** Shifts 10 percent of traffic every 10 minutes until all traffic is shifted.
- **CodeDeployDefault.LambdaAllAtOnce:** Shifts all traffic to the updated Lambda functions at once.

AWS CodeDeploy - Deployment Configurations

- **CodeDeployDefault.ECSLinear10PercentEvery1Minutes:** Shifts 10 percent of traffic every minute until all traffic is shifted.
- **CodeDeployDefault.ECSLinear10PercentEvery3Minutes:** Shifts 10 percent of traffic every three minutes until all traffic is shifted.
- **CodeDeployDefault.ECSCanary10Percent5Minutes:** Shifts 10 percent of traffic in the first increment. The remaining 90 percent is deployed five minutes later.
- **CodeDeployDefault.ECSCanary10Percent15Minutes:** Shifts 10 percent of traffic in the first increment. The remaining 90 percent is deployed 15 minutes later.
- **CodeDeployDefault.ECSAllAtOnce:** Shifts all traffic to the updated Amazon ECS container at once.

AWS CodeDeploy - Deployment Configurations

- **CodeDeployDefault.AllAtOnce:** CodeDeployDefault.AllAtOnce attempts to deploy to all instances at once. The overall deployment succeeds if deployment to even a single instance is successful. It fails only if deployments to all instances fail.
- **CodeDeployDefault.HalfAtATime:** Deploys to up to half of the instances at a time. The overall deployment succeeds if the application revision is deployed to at least half of the instances. Otherwise, the deployment fails.
- **CodeDeployDefault.OneAtATime:** The overall deployment succeeds if the application revision is deployed to all of the instances.If deployment to the last instance fails, the overall deployment still succeeds.

AWS CodeArtifact

- AWS CodeArtifact is a fully managed artifact repository service that makes it easy for organizations of any size to securely store, publish, and share software packages used in their software development process.
- **Securely store and share artifacts:** CodeArtifact integrates with AWS Key Management Service (KMS) to provide encrypted storage.
- **Use common package managers and build tools:** CodeArtifact works with commonly used package managers and build tools like Maven, Gradle, npm, yarn, twine and pip.

AWS CodeDeploy - On Premises Instances

- An on-premises instance is any physical device that is not an Amazon EC2 instance that can run the CodeDeploy agent and connect to public AWS service endpoints.
- If you don't want an on-premises instance to be used in deployments anymore, you can simply remove the on-premises instance tags from the deployment groups.
- For a more robust approach, remove the on-premises instance tags from the instance.
- You can also explicitly deregister an on-premises instance so it can no longer be used in any deployments

AWS CodeDeploy - Pricing

- **For CodeDeploy on EC2/Lambda:** There is no additional charge for code deployments to Amazon EC2 or AWS Lambda through AWS CodeDeploy.
- **For CodeDeploy On-Premises:** You pay $0.02 per on-premises instance update using AWS CodeDeploy. There are no minimum fees and no upfront commitments.
- You pay for any other AWS resources (e.g. S3 buckets) you may use in conjunction with CodeDeploy to store and run your application. You only pay for what you use, as you use it; there are no minimum fees and no upfront commitments.