

# AWS CodeDeploy

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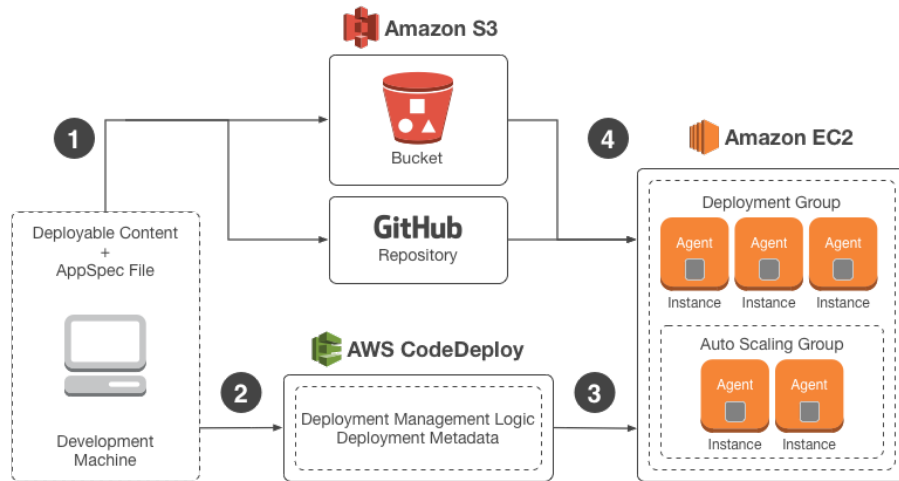
## 1 Introduction

AWS CodeDeploy is a self managed deployment service that can automatically deploy software services to Amazon EC2, AWS Fargate, AWS Lambda, and physical servers. AWS CodeDeploy makes it easier to quickly deliver new functionality, avoid downtime during application implementation, and manage the complexity of application updates. AWS CodePlay can be used for software deployment automation, leading to less manual operations with error. This service can scale to match needs for deployment.

### 1.1 Types of CodeDeploy Deployments

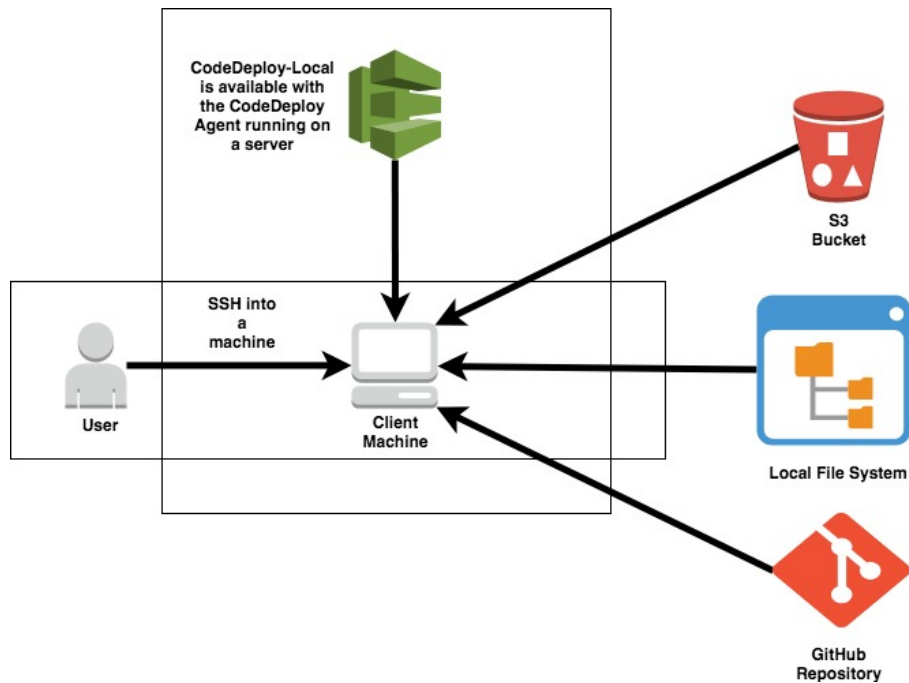
- **In Place Deployment:** This type of deployment goes through a multistep process. First, the deployment group instance is stopped, as the latest revision is installed in which the new application version is cross checked. During deployment, each instance is de-registered using a load balancer, later being restored back to service once deployment is finished. However, in-place deployments can only be used with EC2/On-Premise compute platforms.
- **Blue/green deployment:** A blue/green deployment minimizes interruptions from new application systems while updated said applications. CodeDeploy is able to supply new applications with old versions of the application before redirecting app production traffic. With AWS Lambda, traffic is shifted from one version of a Lambda function to a new version of the same function. With AWS ECS, traffic is shifted from a task set in the service to an updated task set in the same service environment. With EC2/On-Premise deployments, traffic is shifted from one set of instances a replacement instance set in the original environment. When these resources are modeled with AWS CloudFormation, a stack updated is created for the task set. Production traffic shifts from your service's original task set to a replacement task. This is done either all at once with linear deployments, or with canary deployments, as it update and initiates a new app development in CodeDeploy. The status and history

of the deployment can be viewed in CodeDeploy, but no CodeDeploy resources can be managed outside of the AWS CloudFormation template.



## 2 Benefits of AWS CodeDeploy

- **Serverless and container applications:** CodeDeploy allows for the deployment of traditional applications that utilize serverless AWS Lambda function versions or Amazon ECS applications.
- **Deployment Automation:** Across development through production environments, CodeDeploy is able to automate the deployment of applications. Furthermore, it has the ability to scale alongside application infrastructure to deploy to different magnitudes of instances.
- **Lower Downtime:** CodeDeploy is able to maximize the application availability if the application's compute platform is EC2 or on-site. Instances can be specified to be taken offline during updates. During deployment, up to date application revisions are installed on replacement instances. Traffic is rerouted to these instances that are chosen with ease.
- **Centralization:** Status of deployments can all be launched and tracked through the CodeDeploy console or the AWS CLI. These reports list the deployment of each application as well as which Amazon EC2 instances it was deployed to.



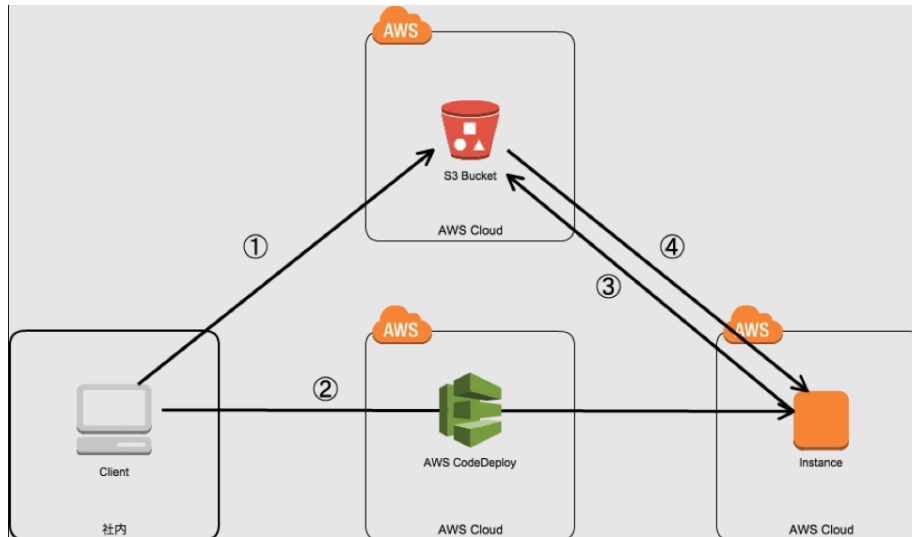
### 3 Compute Platforms

- **EC2 and on-site:** These are physical server instances, such as Amazon EC2 cloud instances, on-premises servers, etc. Applications made using this types of compute platforms can be made of executable files, configuration files, images, and more. Traffic routed to these instances is managed with an in-place or blue/green deployment type.
- **AWS Lambda:** Deploys applications consisting of updated versions of Lambda function. AWS Lambda manages this deployment function in a serverless compute environment that contains a high-availability compute structure.
- **AWS ECS:** Deploys an Amazon ECS container applications a blue/green deployment through installing updated versions of the application in a replacement task set. Traffic is directed from the application task set to the replacement task set, being terminated after a successful deployment.

### 4 Copmpanies using AWS CodeDeploy

- **3M:** Uses it to build quick application environments that can be managed centrally.

- **Instacart:** Uses it to manage large volumes of daily deployments while also shipping appliances to customers faster and more efficiently.
- **SmartNews:** Uses it to support systems of software deliver that have many micro services.



## 5 Demo

Here is the link for the demo on Qwiklabs: **DEMO**