DEVOPS

What Is CICD, Fundamental of CICD and Benefits of CICD For Cloud Base Products

CICD is the process of automating software product/code several times a day through a well-defined pipeline with high efficiency

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What is CICD?

Continuous Integration and Continuous Deployment is set of DevOps approach, processes that enable changes made to software to be delivered several times a day in a well fashioned, timely, secured and repeatable manners through automation process.

Process of CICD

CICD comprises of the following processes:

1- Continuous Integration
2- Continuous Deployment
3- Continuous Delivery

What is Continuous Integration:

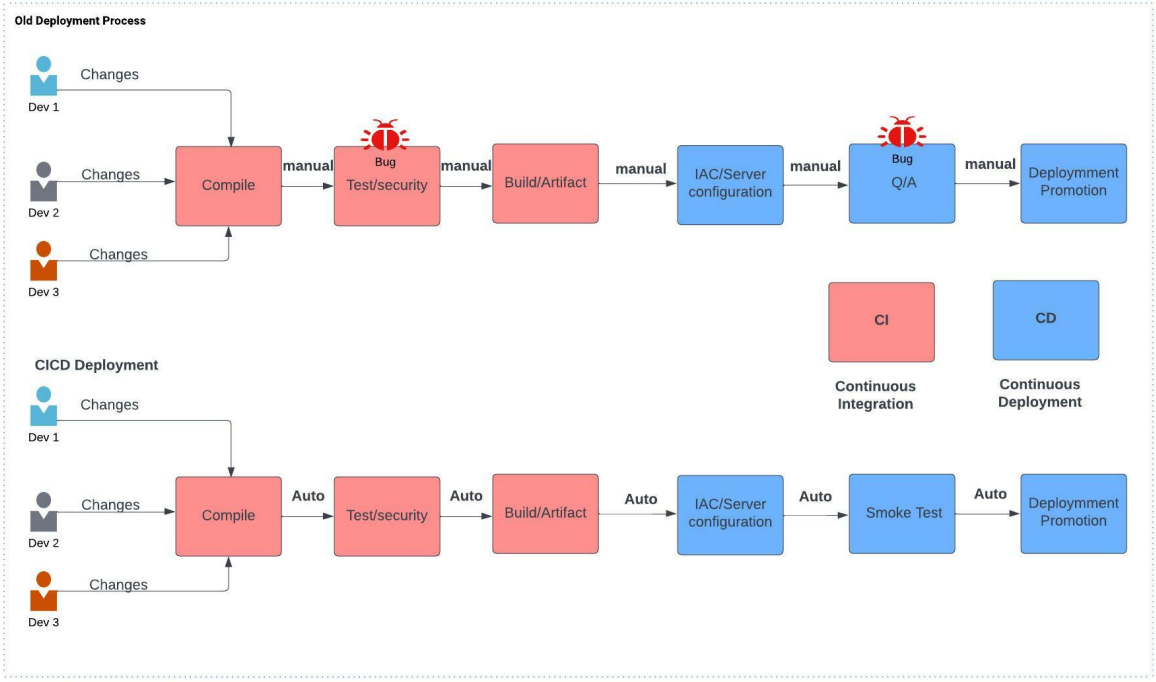
The engineering practice of automating the integration of code of multiple distributor into a single line.

What is Continuous Delivery:

An engineering practice in which teams produce and release value in short cycles.

What is Continuous Deployment:

A software engineering approach in which the value is delivered frequently through automated deployments.



CICD DEPLOYMENT PROCESS

Fundamental Of CICD

CICD fundamental can be categories into 2 approaches which are:

- Continuous Integration
- Continuous deployment

Continuous Integration

CI is the process of merging several developers work severally to a shared mainly a day with the goal of creating a high quality, deployable artifact.

The process of the continuous integration comprises of the following:

- Compile
- Running Unit Test
- Static Analysis of code or Code linting
- Dependency Vulnerability Testing
- Store Artifact

Continuous Deployment

A software engineering approach in which CI artifacts are delivered frequently through an automated deployment process.

The process of continuous deployment comprises of the following:

- Creating deployment Infrastructure IAC
- Provisioning of servers (ansible)
- Copying/moving files
- Smoke Test / Verify / Run test
- Rollbacks if error and clear infrastructures
- Promote to Production

Benefits of CICD

CICD benefits are divided into 4 major categories in which the fundamentals of CICD depend upon, the categories are as followed:

- Reducing of Cost
- Avoiding Cost
- Protect Revenue
- Increase Revenue

Relating CICD fundamental with its Benefits

Catch compile error after merging

Lesser time to resolving issues from another developer

Benefits Reducing of Cost

Running Unit Test

Less time in testing manually and less bug in production

Benefits – Avoid Cost

Detect Security Vulnerability

Avoid Security hole in production

Benefits – **Avoid Cost**

Automate Infrastructure Creations

Faster deployments and less error in setup

Benefits – **Avoid Cost**

Automate Cleanup Phase

Lesser infrastructure cost on unused recourses after promotion and during rollback

Benefits – **Reduces Cost**

Frequent Production Deployment Through Automation

New features are release more frequently

Benefits: **Increase Revenue**

Automate till production / No manual check

Less time to markets

Benefits – **Increase Revenue**

Automated Smoke Test

Reduces Downtime from deploy related crash and bugs / QA testing

Benefit – Protect Revenue

Automated Rollbacks during failure

Quick undo to production working state and clean up

Benefit **Protect Revenue**

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