CI/CD?

Understanding What is the CI/CD, its benefits and selling it

TODAY'S PRESENTATION

CI/CD

Before we start with the session, let's warm up a little with What's the CI/CD

CI/CD allows organizations to ship software quickly and efficiently.

CI/CD facilitates an effective process for getting products to market faster

What is CI/CD ?

CI/CD

CI/CD is a method to frequently deliver apps to customers by introducing automation into the stages of continuous delivery, and continuous deployment. CI/CD is a solution to the problems integrating new code can cause for development and operations teams (AKA "integration hell"). Specifically, CI/CD introduces ongoing automation and continuous monitoring throughout the lifecycle of apps, from integration and testing phases to delivery and deployment. Taken together, these connected practices are often referred to as a "CI/CD pipeline" and are supported by development and operations teams working together in an agile way with either a DevOps or site reliability engineering (SRE) approach.

ensures software quality and security and increases the profitability of code in production.

CI/CD WORK

How CI works?

CI is a process of developing, building, testing, and deploying software using automated tools. The process starts when a developer updates the source code, a CI tool pulls the code and pushes it to a build and test server.
Upon successful testing, the software is deployed to the manual check stage; once the operator approves the software it is then deployed to the production server where it is available to the customer.

How CD works?

CD is a stage in CI/CD pipeline where the software is containerized and virtualized using tools such as Docker for containerization and Puppet or Ansible for configuration management. The fundamental difference between continuous delivery and continuous deployment is a manual quality assurance check stage that exists in the continuous delivery.
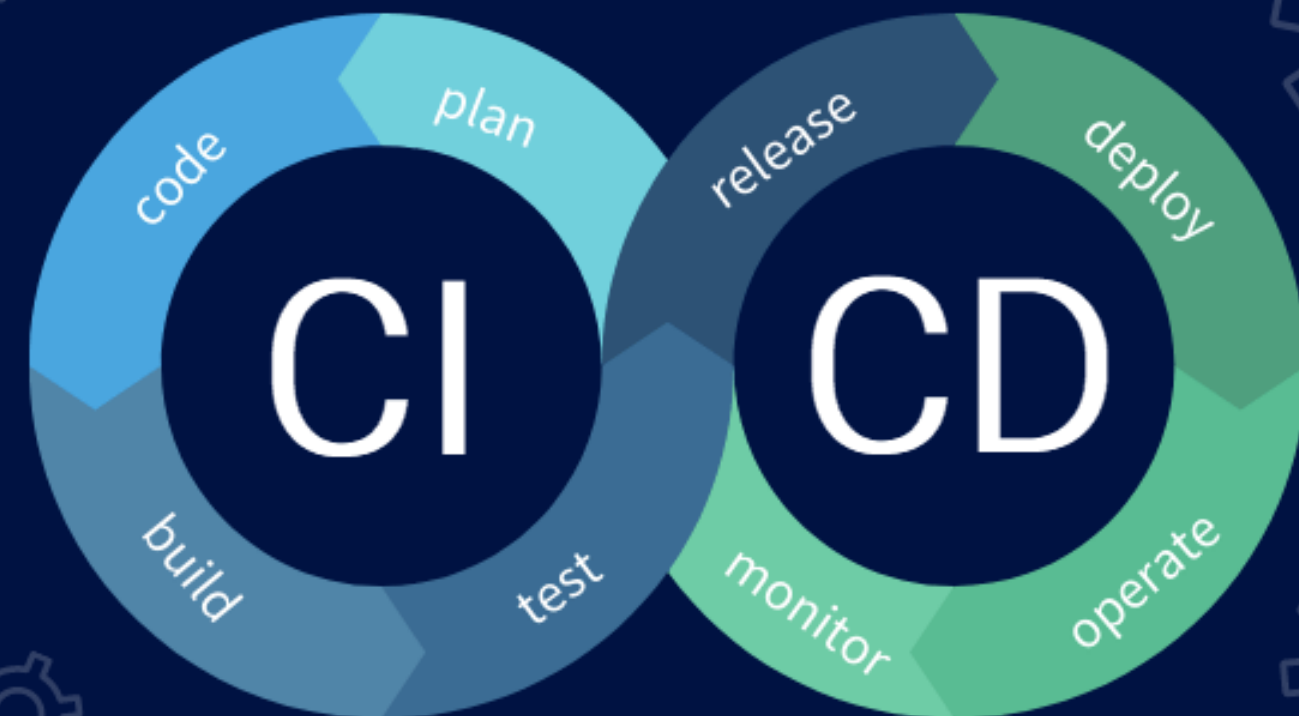
Containerization is the process of packing software with all its dependencies to ensure it runs on every system.

Configuration management is a part of continuous deployment where the server such as puppet or ansible connects with other tools such that it can run on any system.

CI - BENEFITS

1 Find problems easily

2 Reduce costs

LEAD TIME:

- Early feedback and build/test automation help decrease the time it takes to go from code committed to code successfully running in production.

- Iterate faster: Smaller code changes allow software development teams to iterate faster and are easier to manage.

DEPLOYMENT FREQUENCY

- Automated tests and builds are a prerequisite to automated deploy.

- Improve transparency: Continuous feedback through frequent testing helps developers see where bugs are.

TIME TO RESTORE SERVICE

- Automated pipelines enable fixes to be deployed to production faster, reducing mean time to resolution (MTTR).

CHANGE FAILURE RATE

- Early automated testing greatly reduces the number of defects that make their way to production.

- Make users happy: Fewer bugs and errors make it into production, so users have a better experience.

CD - BENEFITS

1 Time Saving   **2** Reduced Risk and Cost

IMPROVED SPEED OF DEVELOPMENT

- Since Development does not pause for deployment and release, the coding process is much faster.

- IT FACILITATES THE DEVELOPMENT OF ALTERNATE VERSIONS OF FEATURES AND DEVELOPERS CAN COMPARE WHICH APPROACH WORKS BETTER.

IMPROVED SPEED OF BUG FIXES

- As soon as any feature is rolled out, the users start using it and report bugs early. This gives enough bandwidth to developers to rectify it as they don't have to dig deep into the past to find it.

OPTIMAL UTILIZATION OF TIME

- Automatic Deployment aids the team to re-prioritize tasks on a continuous basis and focus on other tasks than investing time in manual deployment.

ENHANCED QUALITY OF RELEASE

- The principle of deploying even the minuscule changes makes sure that bugs are caught early and rectified immediately, resulting in high quality deliverable.

- Better collaboration between the Development, QA, and Operations teams leads to higher quality deliverable and higher customer satisfaction.
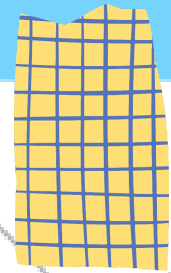
SELLING CI/CD

Because CI/CD automates the process of integrating, releasing, and deploying software while removing traditional roadblocks. It supports the larger goal of agile methodology to accelerate the software development lifecycle, and it supports the DevOps approach of aligning development and operations teams.

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In addition to supporting these larger goals, CI/CD enables you to:

Ship software quickly and efficiently

Increase productivity

Reduce risk on delivery

Incorporate user feedback faster

Standardize processes

Supports all rollbacks types

> And Here we go,
> In the end, I'd like to say thank you for each one who helped me in this cource