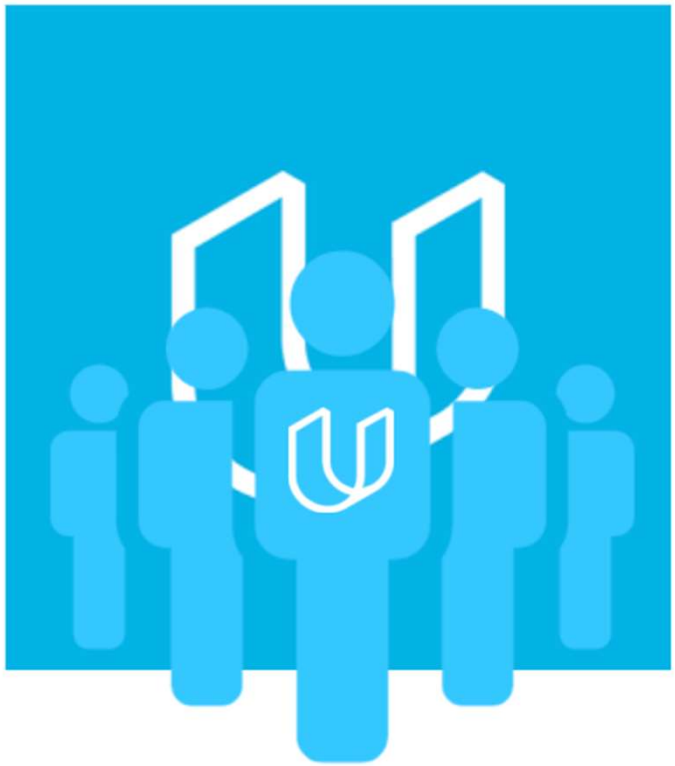

CI/CD
Fundamentals and Benefits

A CI/CD pipeline is essentially a way to apply DevOps in practice, which may be summarized as the following:

- Eliminate team communication silos
- Accept failure as a natural occurrence
- Put changes into action gradually
- Utilize automation and tooling
- Monitor Everything

THE FUNDAMENTALS

Continuous Integration and Continuous Delivery is referred to as CI/CD. To better appreciate the value each of these solutions offers, here is a breakdown of them.

CONTINUOUS INTEGRATION

This phrase describes the efficient building, testing, and merging of code utilizing automation techniques. Prior to being merged into the main branch, continuous integration makes sure that all of the code produced by various developers is error-free. Early on in the software development process, automated testing is carried out, which enables the team to quickly address any flaws.

CONTINUOUS DELIVERY

This method involves releasing software more frequently and quickly, in shorter cycles. The goal is to release code in more frequent, even daily, smaller batches. This makes managing and updating the final software product simpler.

CI/CD
BUSINESS BENEFITS

01

SUPERIOR CODE QUALITY

The enhancement to the overall quality of the code that CI/CD offers is one of the most significant business advantages. As a result of the development team's practice of releasing code in small batches, it may be properly tested. For instance, unit testing enables developers to find and correct the most significant flaws before releasing the software to a live environment. Automated testing enables bug fixes, which are far easier and less expensive than fixing them later.

02

SHORTER TIME-TO-MARKET

Our development team can deliver software builds more quickly because the code modifications are minimal. In essence, this might even be a demand event. This is why CI/CD is crucial for enhancing the team's adaptability and capacity to deliver features quickly. Our development team, for instance, can respond more quickly and provide the necessary functionality when a user requests a feature or a competitor provides an enhancement.

03

COST REDUCTION

Automation is one of the primary reasons why so many companies set up a CI/CD pipeline. A DevOps team's workload is significantly reduced by the automation of the build, test, and deploy phases. Additionally, it substantially lowers the price of software development. Actions that are automated are less prone to human error and are simpler for the team to handle. An ideal deployment process would involve no human involvement at all during any deployment into the production environment.

04

QUICK FEEDBACK

Instant feedback regarding the code for a new build is another fantastic benefit of setting up a CI/Cd pipeline. Applying the concept of failing quickly is worthwhile because failure is a common occurrence. Automation of duties can help us do that. We can quickly fix bugs once they've been found.Automated deployment is the same. When the monitored metrics show that the new version has a problem, we may automatically roll it back and save our business's reputation from any harm that might result from releasing flawed software to the general public.

CI/CD
BUSINESS BENEFITS CONT'D

05

EASIER COMMUNICATION

Effective teamwork and communication are the cornerstones of a successful CI/CD approach. Many software developers, project managers, and testers use the CI/CD pipeline as a common framework. Additionally, we can be certain that developers take on more responsibility and initiative if our team uses this process. At the same time, we will instill a sense of accountability in each team member regarding the quality of the software. This will improve our product's overall quality.

06

GREATER CUSTOMER SATISFACTION

Making consumers happy is the ultimate objective of CI/CD. Customers grow irritated and your company's reputation suffers while dealing with buggy software. You will thrill your application's end users if you release new features frequently, quickly fix bugs, and respond to user feedback.

07

ACCURATE MEASUREMENT

Our team should keep an eye on any potential problems after publishing an application. Because of this, the foundation of every CI/CD pipeline should be continuous monitoring and observability. This allows the team to keep an eye on the functionality, dependability, and performance of our application and take the appropriate action as needed. Monitoring metrics also allows us to develop practical insights and further enhance our software. Businesses can benefit greatly from the DevOps tenet "Measure everything."

08

INCREASED BUSINESS SUSTAINABILITY

The majority of firms want to win a marathon rather than a sprint. Cutting ahead of the competition is difficult, and maintaining that advantage is much more challenging. You can save your staff from completely burning out before your business succeeds by automating manual chores. A CI/CD pipeline requires a substantial initial investment. However, a well-designed pipeline will put your business in a successful position by allowing it to innovate more quickly and satisfy client expectations.

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