CI/CD

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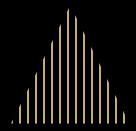
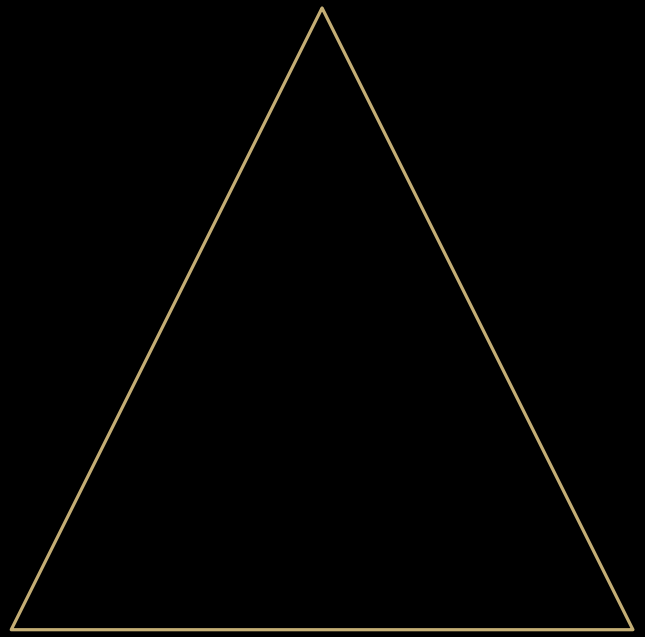
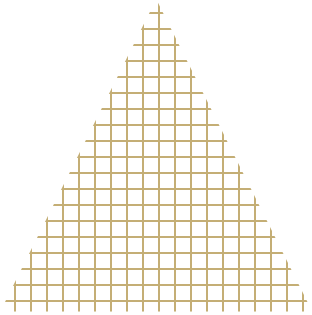




What is CI/CD?

CI/CD stands for Continuous Integration and Continuous Deployment (or Delivery). It is a software development practice that involves automating the build, test, and deployment processes of software products. This practice is widely adopted in cloud-based software development, as it helps teams to achieve faster and more frequent releases, while ensuring software quality and reliability.



Objectives of CI/CD

- The biggest reasons why the switch to CI/CD is required; to greatly speed up and immensely improve the overall Software Development Life cycle, which will greatly enhance code quality and marginally improve on reliability through applicable use of automation techniques and thereby leading to increased revenue for the organization.

- There is also the need to prevent embarrassing and costly security holes and vulnerabilities, which can cause severe loss in revenue for the organization.

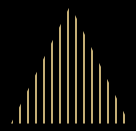
- Avoiding huge costs incurable to the organization due to avoidable post-production failures.

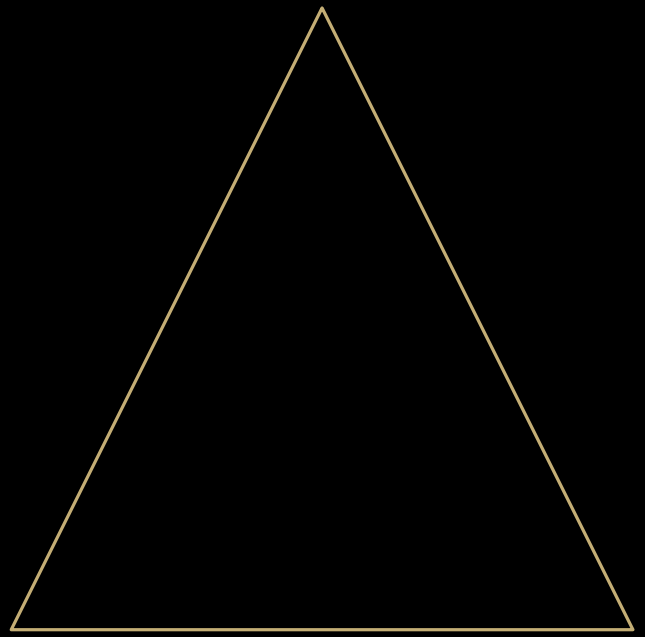
- Protecting the revenue of the organization through early failure detection mechanisms offered by CI/CD and thereby ensuring defective products never leaves the production line; the company does not incur huge costs of payments for product recalls.

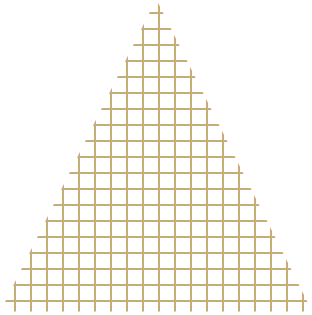
Benefits of CI/CD pipeline

Automation of software releases — from initial testing to the final deployment — is a significant benefit of the CI/CD pipeline. Additional benefits of the CI/CD process for development teams include the following:

- Reducing time to deployment through automation: Automated testing makes the development process more efficient, reducing the length of the software delivery process. In addition, continuous deployment and automated provisioning allow a developer's changes to a cloud application to go live within minutes of writing them.
- Decreasing the costs associated with traditional software development: Fast development, testing and production (facilitated by automation) means less time spent in development and, therefore, less cost.
- Continuous feedback for improvement: The CI/CD pipeline is a continuous cycle of build, test and deploy. Every time code is tested, developers can quickly take action on the feedback and improve the code.
- Improving the ability to address error detection earlier in the development process: In continuous integration, testing is automated for each version of code built to look for issue's integration. These issues are easier to fix the earlier in the pipeline that they occur.
- Improving team collaboration and system integration. Everyone on the team can change code, respond to feedback and quickly respond to any issues that occur.







Benefits of CI/CD to Organization are:

1. Faster and More Frequent Releases With CI/CD, teams can automate the process of testing and deploying code changes, allowing them to release new features and updates more quickly and frequently. This can help organizations to stay competitive by delivering new functionality to end-users faster.

2. Improved Quality and Reliability: By automating the testing process, teams can identify and fix issues more quickly, reducing the risk of bugs or errors in production environments. Additionally, by monitoring the application in production environments, teams can identify and address issues before they become major problems.

3. Increased Efficiency and Productivity: With automation, teams can reduce the time and effort required to deploy code changes, allowing developers to focus on writing code rather than performing manual deployment tasks. This can increase efficiency and productivity, allowing teams to deliver more value with the same resources.

4. Improved Collaboration and Communication: By using a shared code repository and automated processes, teams can collaborate more easily and share knowledge and best practices. This can improve communication and reduce silos, leading to better outcomes and increased innovation.

5. Scalability and Agility: With infrastructure managed as code, teams can easily replicate environments, allowing them to scale up or down as needed. This can improve agility, enabling organizations to respond quickly to changing market or customer needs.

SUMMARY

CI/CD provides competitive advantage to organizations. if used, its reduced risk of deployment ensuring that only high quality codes are released. Also, it allows organizations to respond more quickly to market demands.