BENEFITS OF CONTINUOUS INTEGRATION AND DEPLOYMENT (CI/CD)
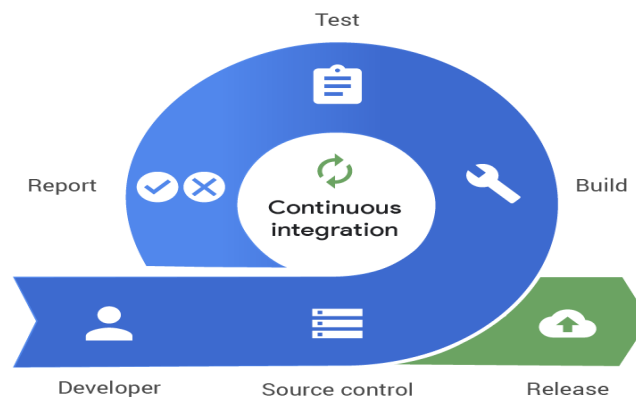
UNDERSTANDING CI/CD

CI/CD is a set of best practices for the development and operations team that help them in implementing code changes more frequently and reliably for release to production. The practice introduces a degree of automation that is appealing to teams of developers concerned with gradual productivity improvement by allowing the developers to focus on the more important aspects of their jobs.

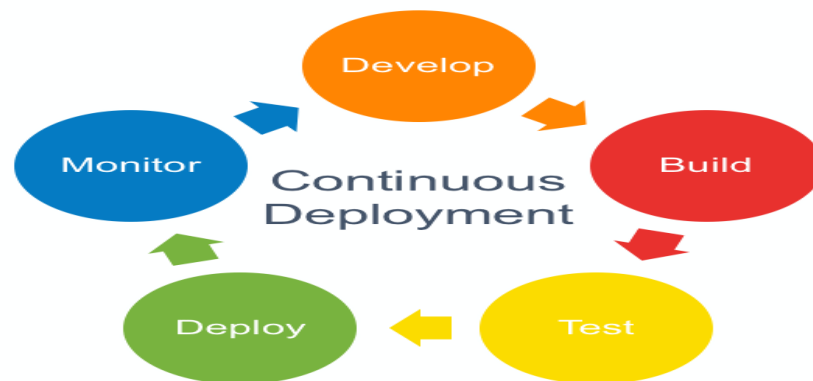The general CI/CD practice:

1) Continuous Integration

This is where the frequent code changes by the developers are handled. The code changes are automatically built, tested, and packaged in a shared repository enabling more productive teamwork.

2) Continuous Delivery/Deployment
The process can refer to either continuous delivery and/or continuous deployment which are related and can also be used synonymously. Continuous delivery is more concerned with providing an automated and repeatable way for the completed code to

be delivered to environments used for testing and development. Continuous deployment inherits from continuous delivery where the changes that passed the automated tests are automatically pushed to production reducing the extra efforts required for deployment.

BENEFITS OF CI/CD

Reduced cost and Improved profits
While using CI/CD overtime standardised deployment processes are developed across the organisation gradually increasing the effectiveness and reducing the likelihood of bugs slipping into production. If implemented correctly, the organisation can cut down on the costs incurred by frequent manual building and testing of new code changes, meaning the developers get to focus on more mundane tasks and the organisation doesn't spend insane amounts of money on tasks that don't necessarily generate revenue.

Improved productivity
One of the main aspects of continuous integration and deployment is automation, which helps free developers from manual tasks and instead works on yielding the best products. Developers have the ability to commit smaller chunks of code on a daily basis or even several times a day to version control reducing the chance of conflict between developers when editing code.

Faster time to market
Effective implementation of CI/CD will help us in bringing new products to the market faster and start generating revenue from the already deployed features rather than waiting until the whole product is deployed. If the product proves to not work as expected, features can be easily pulled from the market for fixes. Since CI/CD will be enabling us to produce high-quality products in considerably less time, we stand to see an increase in profits.

Improved mean time to resolution
The continuous feedback and continuous monitoring provided by CI/CD enable the development and operation team to quickly identify and fix issues related to the product. The

MTTR showcases how effective the DevOps team is and is super important since it directly affects the business's bottom line.

Improved product quality
CI/CD ensures that developers don't have to prioritise quality over speed but instead offers a middle ground where the developers and the operations teams collaborate to find and fix problems faster while still in the early development stages. Manually managing large applications as they continuously evolve is extremely difficult and can threaten code quality over time, automated testing in CI/CD can help in the regular code checks to ensure that quality is either maintained or positively improved. The ability to produce and manage high-quality products will enable us to attract new clients providing a window for improved revenue and profits.

Metrics and performance information gathering
It is good to monitor applications after release to check for possible issues. Metrics monitoring will help us gain actionable insight that will help in product improvement and ensure that our deployments are not accumulating unjustified costs.

It is more customer-centric
With the frequent small code changes released by the developers, customers are able to keep track of the features implemented and criticise them instead of waiting at the end for the final product. This will enable us to achieve higher customer satisfaction and be able to retain our clients.

THANK YOU
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