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BENEFITS OF CICD TO THE COMPANY

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What exactly is CICD, you may ask? CICD, Continuous Integration and Continuous Deployment, in its simplest form, is a tool that takes a code from our team and processes it to make it ready for the market. The processes CICD goes through to make our product ready for the client are; building of code, testing of build to find flaws, analyzing, deployment, verification then finally promoting the product. CICD lists out some practices (best practices) or instructions to be followed to get your code out the door in a timely and safe manner for the satisfaction of our users and to ultimately rake in revenue.

Continuous integration is a development practice that encourages our developers to integrate into a shared repository several times consistently and continuously in a day. CI provides an automated process of building, packaging, and testing new software. Since CI is an automated tool, you are sure to get consistent results each time which is difficult to achieve if done manually.

When using CI, our developers would commit code changes into a shared repository that would trigger an automatic build and test sequence. These changes are always small and provide quick feedback to the developers and alert the developers about errors that arise.

The end product of CI is used as a raw product by CD (Continuous Deployment). CD enables developers to deploy regular software updates to different environments and end-users/clients whenever the need arises.

To get the best out of CICD, smaller and more frequent software updates are preferred as they are less disruptive and are easier to roll back in the case of an error. The team also has the avenue to quickly deliver new products or features which allows the company to meet one of its fundamental goals, satisfying the customer.
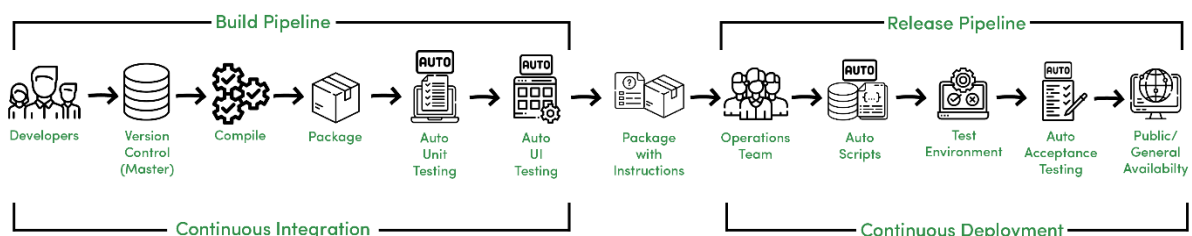
Based on the diagram above, once our developers commit code to the Version Control service (GitHub), the trigger is set in the CI tool (Circleci) to pull the commit and build it. Upon successful build with no hiccups, the code is pushed to production and if there is an error in our new build, a simple roll back to the previous version can be made so quickly that the user may never notice. CICD helps to reduce downtime. Downtime in this case refers to an application or server going offline

when not intended to. This can cause the organization major losses in terms of revenue and clients. CICD would allow the organization to avoid downtime while reducing the risk of exposing users to breaking changes when deploying applications.

CICD practices should matter to this organization as it helps get continuous feedback not only from our customers but also from our team. The use of CICD in this Organization would have extraordinary benefits, both financial and technical. Some of the benefits of implementing CICD pipelines in our development processes are:

1. Less bugs get shipped to production. This reduces cost as less time is spent on issues from the new developer's code.

2. Security vulnerabilities are detected quickly. This avoids unwarranted additional cost to Udapeople since embarrassing and costly security holes are detected fast and closed.

3. Testing costs are reduced drastically as the CI server can run hundreds of tests in a matter of seconds. This also reduces the time to market Udapeople.

4. The Udapeople QA team will spend less time testing and concentrate their efforts on improving the test algorithms. This will drastically reduce test-related costs.

5. Faster mean time to resolution for Udapeople as developers are alerted for any build fail. This in turn protects revenue.

6. Automated Infrastructure creation and clean-up. This avoids the cost introduced by human errors when creating infrastructure and reduces the cost accrued in unused resources.

7. Faster and accelerated feedback loop with Udapeople customers as releases are done more often. This increases customer retention and revenue protection.

8. Deployment to production is done without manual checks. This increases revenue as there will be less time to market for Udapeople.

In conclusion, CICD is a system that was made to make life easier for our developers. It allows for quick and seamless system updates, easier problem solving, and a better customer experience. These valuable benefits make CICD an amazing tool to integrate into the business to add efficiency to our business and increase revenue.

References
Diagram credit:

https://media.geeksforgeeks.org/wp-content/uploads/20210109235224/GFGTechnicalScripterImg3Black01.png