Benefits of CI/CD to Achieve, Build, and Deploy Automation for Cloud-Based Software Products

Continuous integration (CI)- involves source code, combining multiple works of developers into **one.**

Code is verified, validated and exercised to check on leaks.

Continuous Deployment (CD) – majors on deployment

Handling rollbacks, prepares infrastructure and reverts if it doesn't go as planned.

PROJECT BACKGROUND

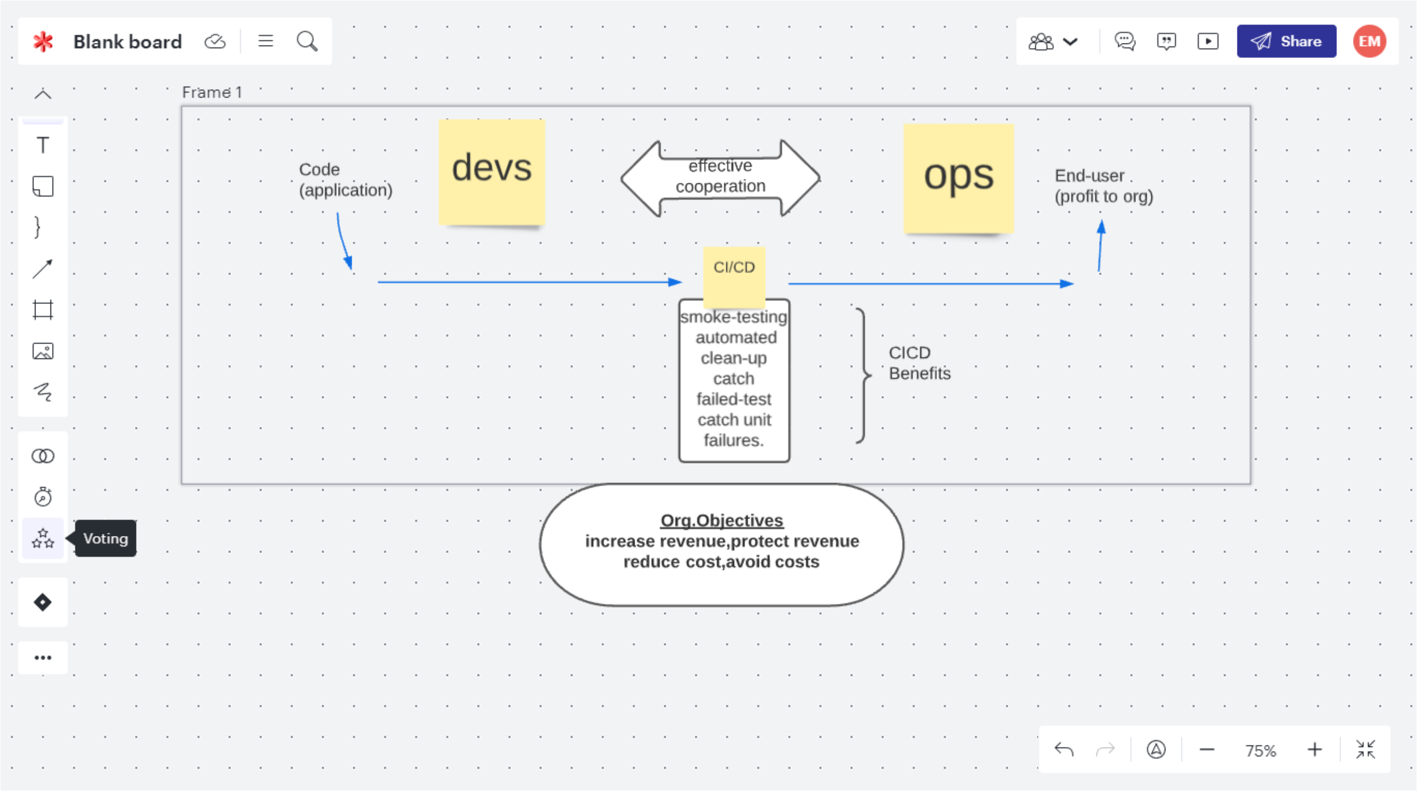
As cloud engineers it's our responsibility to ensure effective cooperation between the developers' team and the operations team. With CI/CD this is easily enabled as it acts like a pipeline to deliver to our clients saves a lot of energy from both the teams. It acts like a factory which manufactures products used by end users our case our initial products are codes which are built, tested analyzed, deployed and promoted to give end products to our customers.

PROJECT SCOPE

- As an organization we need to use less time as possible on developer issues from new a new developer code, with CICD we are able to catch compile errors after merge at a less cost.
- Catch unit test failures, helps to avoid cost Less bugs in production and less testing time
- Automated smoke tests to protect organization revenue this helps in reduced downtime from deploy-related crashes
- Security is usually a major concern in an organization, with CICD we will not only avoid extra costs from security loopholes but also prevent unnecessary embarrassments from audits and from stakeholders.
- To be able to be a competitive organization and have an added advantage, CICD is important as it enables faster and more frequent production deployment This increases revenue to an organization as new features are generated and released more quickly
- Humans including developers are prone to errors, CICD helps minimize this with automating infrastructure creation. This helps an organization by reducing costs
- In an organization, it's all about being rational and by utilizing resources while minimizing costs as possible. CICD is one way of making this possible through automating the infrastructure cleanup to try and reduce the costs.
- Smoke testing is done to ensure an application can perform the basic functionalities before trying to test if it runs the whole process. With CICD this process is automated hence it protects revenue for an organization. As a result, there is reduced downtime from a deploy-related crash or major bug.

There are many tools to automate tasks in CI/CD pipelines, having several features from connections to repos where codes are stored, procedural language outlines steps to integrate artifacts to applications, connections to testing tools and staging environments; and connection to Devops automation tools that provision and configure infrastructure for application deployments

<u>Proposed layout diagram.</u>



Code (application)

devs

effective cooperation

ops

End-user (profit to org)

CI/CD

smoke-testing automated clean-up catch failed-test catch unit failures.

CICD Benefits

Org.Objectives
increase revenue,protect revenue
reduce cost,avoid costs

CI/CD FOR A BETTER UDAPEOPLE PRODUCT!!