CI/CD BENEFITS PROPOSAL

UDACITY PROJECT 3

OVERVIEW

▶ What is the meaning of CI/CD? The explanations of concepts

▶ What are our current pain points?

▶ To the rescue, CI/CD. How can DevOps principles benefit us?

▶ What are the obstacles we'll have to overcome?

What is the meaning of CI/CD? The explanations of concepts

▶ There are three major concepts in CI/CD.

Continuous Integration

The technique of integrating developer branches to the main branch numerous times a day is known as continuous integration. CI priorities test automation and, in the end, produces a high-quality, deployable artefact.

Continuous Delivery

Continuous Delivery, in addition to Continuous Integration, ensures that changes to a software product can be provided to clients fast, automatically, and at any time.

Continuous Deployment

Continuous Deployment is a feature of Continuous Delivery that allows for frequent automated deployments without the need for human intervention. Infrastructure Provisioning, Smoke Testing, Production Deployments, and automated Rollbacks are all common processes in Continuous Deployment.

What are our current pain points?

- Our manual release method is prone to errors and always causes production deployment delays.

- This, in turn, frequently results in poor software quality because we no longer have time for quality analysis.

- Deployments are complicated. Only a few professionals can comprehend the entire procedure, which includes hundreds of handcrafted auxiliary scripts. There are no smoke testing or rollback methods in place.

- We are unable to create flexible solutions since we receive late response from the business department.

To the rescue, CI/CD. How can DevOps principles benefit us?

▶ Statement of the Issue:

(1) An inefficient and error-prone delivery procedure; (2) Poor software quality

▶ Solution:

Automate compiling, testing, code analysis, and artefact storage with Continuous Integration.

Infrastructure Creation Can Be Automated

▶ Advantages:

Cost savings are realized as a result of fewer human errors and faster deployments.

Reduce manual troubleshooting time and complexity

To the rescue, CI/CD. How can DevOps principles benefit us?

▶ Statement of the Issue:

   (3) Difficult deployments and bespoke automation that frequently fail Smoke testing and rollback procedures are missing.

▶ Solution:

   Automate the manual deployment steps for smoke tests and rollbacks that are currently in use.

   Add infrastructure provisioning that is automated.

▶ Advantages:

   Reduced downtime from deploy-related problems and fast and automated rebuilding of the production ready state will protect project revenue with automated smoke tests and rollbacks.

To the rescue, CI/CD. How can DevOps principles benefit us?

▶ Problem Statement:

(4) Late customer feedback

▶ Solution:

Implement Continuous Deployment: automated deployment of changes at any given point in time

Involve customers and business stakeholders already in deployment process

▶ Advantages :

Faster feedback cycles of customers lead to higher customer satisfaction rates since they are involved right from the beginning of feature development/deployment and not just at a fixed release date

What are the obstacles we'll have to overcome?

- CI/CD requires a significant amount of upfront investment and training. This may appear daunting at first glance when compared to existing best practices.

- CI/CD pipeline delivery is not a one-time effort; it necessitates ongoing support and maintenance, as well as ongoing development and improvement.

- CI/CD will improve overall business operations and drastically cut expenses in the long run, despite some hurdles.