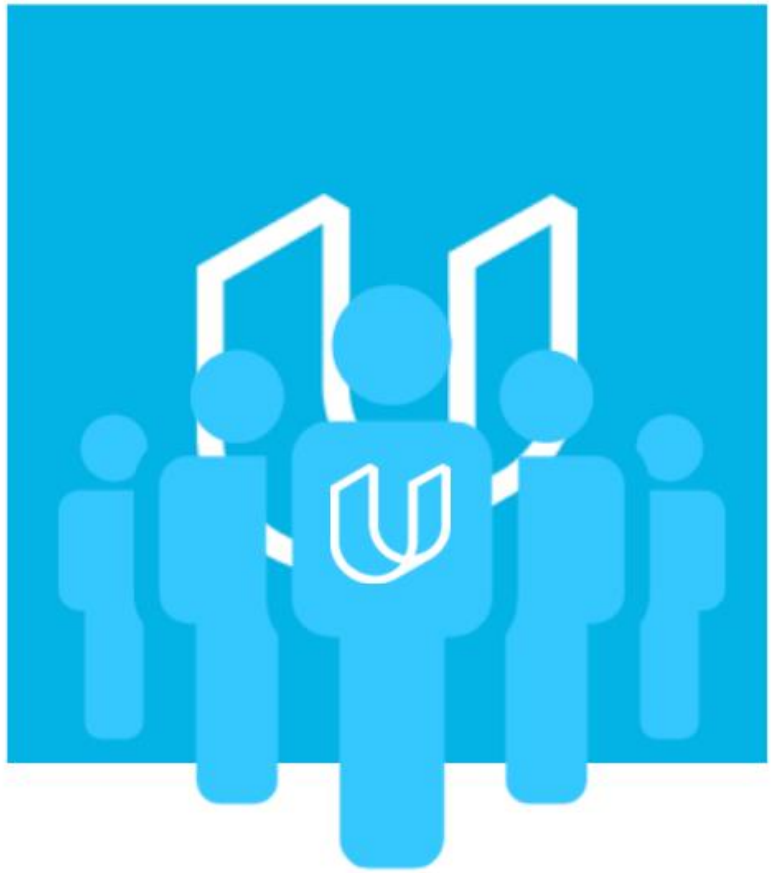

UDAPEOPLE

CI/CD Benefits

OVERVIEW

- What does CI/CD mean?
- Which problems do we currently face?
- How could DevOps principles help us?
- What obstacles will we have to overcome?

WHAT DOES CI/CD MEAN?

- CI/CD consists of three major concepts:
  - Continuous Integration
    - Continuous integration is the term used to describe the process of often merging developer branches with the main branch. CI prioritizes test automation and ultimately produces a high-quality, deployable artifact.
  - Continuous Delivery
    - Continuous delivery ensures that updates to software products can be delivered quickly to clients in an automated manner and at any time.
  - Continuous Deployment
    - Continuous Deployment is an extension of Continuous Delivery that permits regular automatic deployments with no human involvement. Infrastructure Provisioning, Smoke Testing, Production Deployments, and automated Rollbacks are typical Continuous Deployment processes.

WHICH PROBLEMS DO WE CURRENTLY FACE?

- Our manual release method is prone to mistakes and consistently causes production deployments to be delayed.
- Since we no longer have time for quality analysis, this frequently results in poor software.
- Deployments can be quite complicated. Only a select few professionals who have spent countless hours carefully crafting helper programmes can comprehend the entire procedure. There are no rollback methods or smoke testing.
- We get late feedback from the business department which prevents us from creating flexible solutions

HOW COULD DEVOPS PRINCIPLES HELP US?

Problem1:

Poor software quality with a manual deployment method that is prone to errors

Solution:

Implement Continuous Integration by automating artifact storage, code analysis, testing, and compilation. And automate infrastructure creation

Benefits:

Reduce complexity and risk when performing manual troubleshooting.

Reduced human error and quicker deployments result in cost savings.

Problem2:

Handmade automation and complex deployments are frequently unsuccessful. Lack of rollback methods and smoke tests.

Solution:

Automate the manual deployment procedures used now for rollbacks and smoke tests. And automated infrastructure provisioning

Benefits:

The source code contains the facts, not the opinions of a single or few specialists. This means that across the entire automation process, regressions and breaking changes in code as well as infrastructure deployments may be detected and fixed considerably more quickly.

WHAT OBSTACLES WILL WE HAVE TO OVERCOME?

- There is a significant upfront expense and learning involved in establishing CI/CD. When compared to existing best practises, this may initially appear daunting.

- Delivering CI/CD pipelines is a continual process that involves ongoing support, maintenance, and continuous development and improvement.

- Despite some difficulties, CI/CD will enhance overall business operations and significantly cut expenses in the long term.