Fundamentals and Benefits of CI/CD

To achieve build and deploy automation for cloud-based software

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Introduction

CI/CD is the life saver from human errors that can be discovered late. Discovering human errors late means loss of time and cost and vise versa. CI/CD is an automated process that build, test, audit, deploy, and monitor the developed software. So, the team can comfortably focus on the development of new features while the code is in a safe hand with CI/CD.
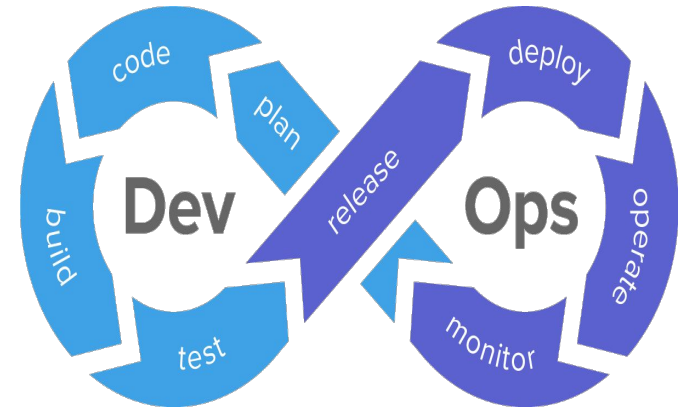
Benefits of CI/CD

To save time and cost with focus on the business and product development

1. Human errors

Reducing and preventing human errors can save your company from catastrophic issues

➜ **Code testing**
Automate code testing and auditing that can be forgotten by developers.

➜ **Infrastructure configs**
Create and configure the servers automatically.

➜ **Deployment**
Project deployment on the server is ideal without errors.

2. Rollback

CI/CD will destroy the created environment and rollback if any step failed.

➜ **Code test**
   If code test failed means there are bugs in your system.

➜ **Code audit**
   If code audit failed means it might be hacked.

➜ **Infrastructure**
   If any deployment failed means the project won't run properly on production.

3. Cost and time

CI/CD saves time and cost by discovering the issues early.

➜ **Time**
Discovering the issues during running the pipeline saves huge time that discovering it on production environment.

➜ **Cost**
You might loss clients, orders, etc. because the bugs appeared on production.

4. Monitoring

CI/CD can monitors your system 24/7.

➜ **Send emails or messages**
Monitoring can send messages to the team when particular issues happened (i.e running out of space).

➜ **Charts**
You can see graphs and charts to check the system progress, status, etc.

Applying CI/CD

To automate the build and deployment process

Many tools out there.

- Circle CI
- Jenkins
- Gitlab
- Bitbucket and more