CI/CD – Udapeople Project

What is a CI/CD pipeline?

A CI/CD pipeline automates the process of software delivery. It builds code, runs tests, and helps you to safely deploy a new version of the software. CI/CD pipeline reduces manual errors, provides feedback to developers, and allows fast product iterations.

CI/CD pipeline introduces automation and continuous monitoring throughout the lifecycle of a software product. It involves from the integration and testing phase to delivery and deployment. These connected practices are referred as CI/CD pipeline.

Why CI/CD?

1) Builds and testing can be easily performed manually.

2) It can improve the consistency and quality of code.

3) Improves flexibility and has the ability to ship new functionalities.

4) CI/CD pipeline can streamline communication.

5) It can automate the process of software delivery.

6) Helps you to achieve faster customer feedback.

7) CI/CD pipeline helps you to increase your product visibility.

8) It enables you to remove manual errors.

9) Reduces costs and labour.

10) CI/CD pipelines can make the software development lifecycle faster.

11) It has automated pipeline deployment.

12) A CD pipeline gives a rapid feedback loop starting from developer to client.

13) Improves communications between organization employees.

14) It enables developers to know which changes in the build can turn to the brokerage and to avoid them in the future.

15) The automated tests, along with few manual test runs, help to fix any issues that may arise.

CI/CD Tools

	Jenkins	circleci	TeamCity	Bamboo	GitLab
Open source	Yes	No	No	No	No
Ease of use & setup	Medium	Medium	Medium	Medium	Medium
Built-in features	3/5	4/5	4/5	4/5	4/5
Integration	★ ★ ★ ★ ★	★ ★ ★	★ ★ ★ ★	★ ★ ★	★ ★ ★ ★
Hosting	On premise & Cloud	On premise & Cloud	On premise	On premise & Bitbucket as Cloud	On premise & Cloud
Free version	Yes	Yes	Yes	Yes	Yes
Build Agent License Pricing	Free	From $39 per month	From $299 one-off payment	From $10 one-off payment	From $4 per month per user
Supported OSs	Windows, Linux, macOS, Unix-like OS	Linux or MacOS	Windows, Linux, macOS, Solaris, FreeBSD and more	Windows, Linux, macOS, Solaris	Linux distributions: Ubuntu, Debian, CentOS, Oracle Linux