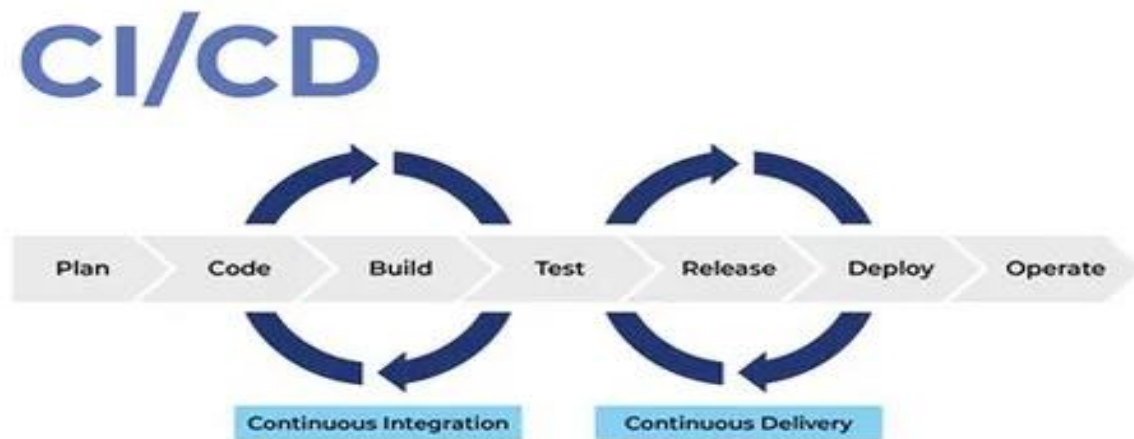


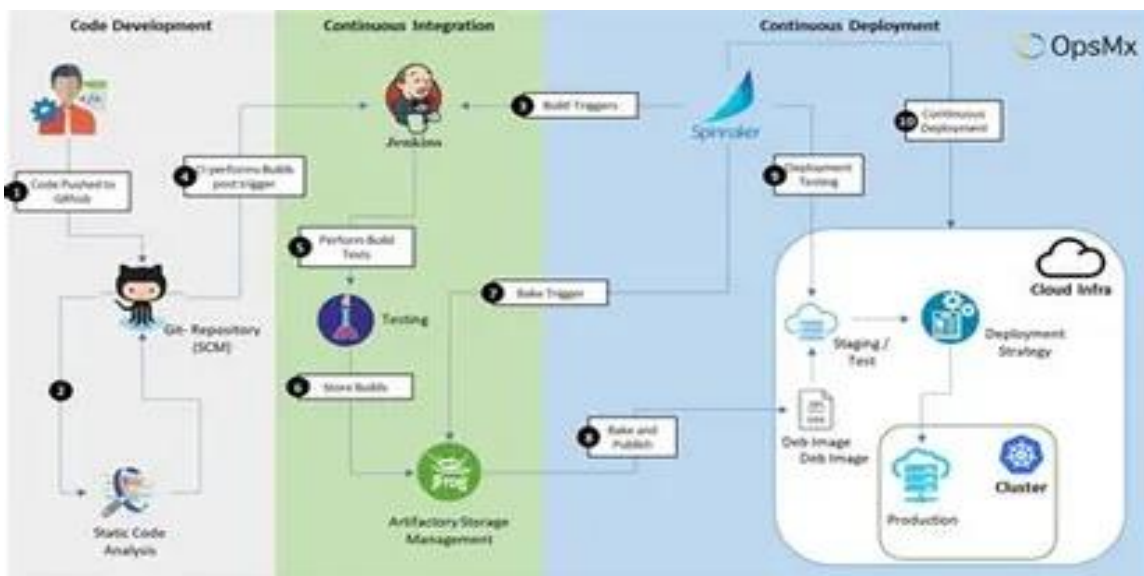
**Explain the fundamentals and benefits of CI/CD to achieve, build, and deploy automation for cloud-based software products.**

Continuous integration and continuous deployment involves the continuous developing, testing, deploying of applications. Tools used for such process includes, git, github, packer, ansible, terraform, circleci, aws.

The CI/CD pipeline



CI/CD tools



The

benefits of CI/CD to business includes:

1. Bringing products to clients faster:

The ci/cd process ensure faster release of products to clients as the processes are now automated thanks to tools that enable devops and developers do not have to manually step in.



## 2. Errors can be found faster:

Errors in code can be found and fixed faster, thus preventing a delay in the process to deploying applications to customers. Any error identified is pointed out due to the continuous tests done when the developers push their code. This helps the business not lose money to errors that would have been fatal.

## 3. Reduce costs and boosts profits:

Less time is spent on every stage of the product, bug fixes, testing are automated, thus ensuring more time isn't spent on tasks that don't provide value to the business.

## 4. Provides real-time visibility of the development process:

The stakeholders can see the issues that are involved in the project, they can easily spot the things they need changed and this ensures that time isn't wasted on things that don't benefit the business.

## 5. Monitoring and alarming:

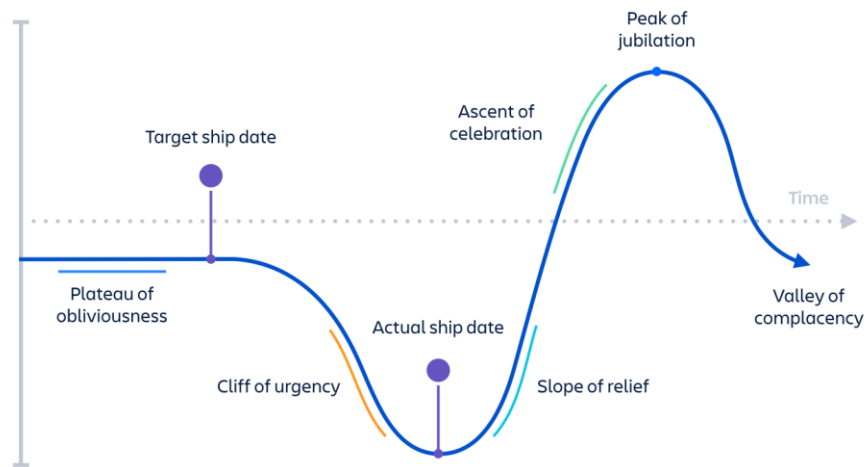
The ci/cd process ensures that application, logs and infrastructure is monitored, the continuous monitoring ensures that issues with the products or infrasture is spotted immediately and prevents loss of money. Alarms are setup to send notifications to the team whenever certain conditions are met, thus allowing the tream to respond.



Supports cloud based software products:

CI/CD is beneficial to the cloud enables benefits such as scalability, elasticity, brings about an improved performance.

## Emotional cycle of manual delivery



### References:

1. <https://www.3pillarglobal.com/insights/the-business-impact-benefits-of-ci-cd/>