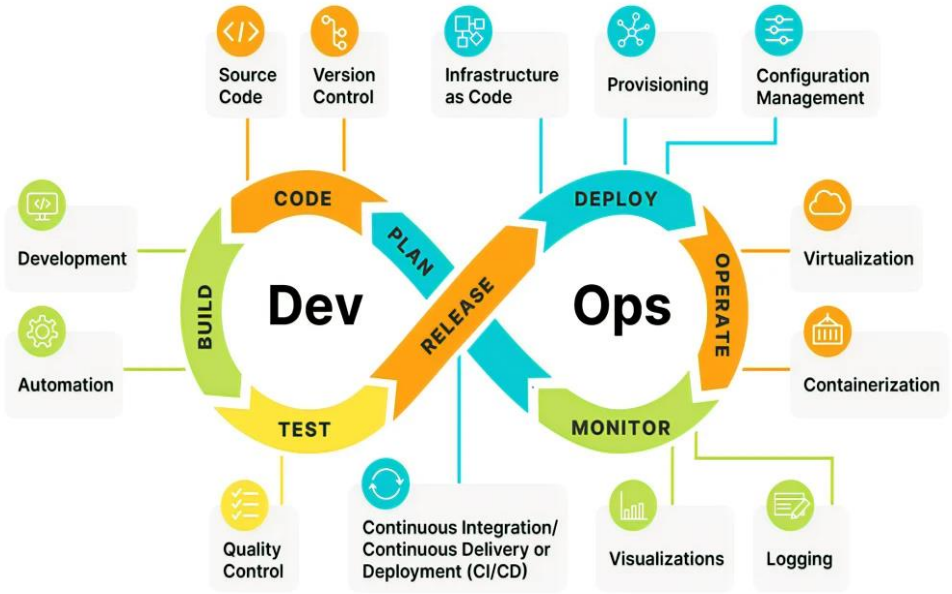
INTRODUCTION TO DEVOPS



What is DevOps?

DevOps is the combination of cultural philosophies, practices, and tools that increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes.

This speed enables organizations to better serve their customers and compete more effectively in the market.

DevOps Aims at:

- ✓ Shortens development life cycle
- ✓ Provides features and fixes
- ✓ Provides regular updates

DevOps is an agile relationship between Development and IT operations

DevOps is abbreviation for **Development** + **Operations**

Development incudes: **Plan**, **Create**, **Verify** and **Package**

Operations includes: **Release**, **Configure** and **Monitor**

What is Automation?

Automation is a term for technology applications where human input is minimized. This includes business process automation (BPA), IT automation and personal applications

Any industry that encounters repetitive tasks can use automation

Automation is the use of machines to perform previously performed by humans or, increasingly, jobs that would be impossible without them. Although "mechanization" is frequently used to refer to the simple replacement of human labor with machines, automation generally refers to the integration of machines into a self-governing system.

What is Scaling?

Scaling refers to the process of increasing the capacity or capabilities of a system to meet the demands of a growing user base or workload.

This can involve a variety of measures, such as adding more servers or other resources to the system, implementing load balancing to distribute traffic across multiple servers, and using automation to streamline the process of provisioning and managing resources.

Vertical scaling refers to the process of increasing the capacity of a single server or system by adding more resources such as CPU, memory, or storage.

This can be done by upgrading the hardware on the existing server, or by adding additional servers that are connected to the main server in some way.

Horizontal scaling refers to the process of increasing capacity by adding more servers or systems to a network.

This can be done by adding new servers that are independent of the existing ones, or by using load balancers to distribute traffic across multiple servers.

What is infrastructure?

Infrastructure refers to the underlying hardware and software resources that are required to support the development, testing, and deployment of software applications.

This can include servers, networks, storage devices, and other hardware, as well as the tools and frameworks that are used to manage and automate these resources.

By using infrastructure as code (IaC) and other automated tools, organizations can more easily provision, manage, and scale their infrastructure to meet the demands of their software development and deployment processes.

This can help to improve efficiency, reduce errors, and enable faster delivery of new features and updates to users.

Why DevOps is Important?

DevOps aims to bridge the gap between development and operations teams, and to automate many of the processes involved in software delivery.

1. **Faster delivery of software:** By automating the software development and delivery process, DevOps can help organizations to release new features and updates more quickly.

2. **Improved collaboration:** DevOps promotes closer collaboration between development and operations teams, which can help to reduce conflicts and improve communication.

3. **Higher quality software**: By implementing continuous integration and testing, DevOps can help to identify and fix errors and defects more quickly, resulting in higher quality software.

4. **Greater agility**: DevOps enables organizations to more easily adapt to changing requirements and priorities, as they can quickly make and deploy changes to their software.