

A close-up photograph of a person's hand typing on a laptop keyboard. The hand is positioned on the right side of the keyboard, with fingers pressing down on the keys. The laptop is silver and the keyboard is black. The background is blurred, showing a desk and some office equipment. The text "Getting Started with DevOps" is overlaid in the center of the image in a large, dark, serif font.

# Getting Started with DevOps

# What is DevOps?

DevOps is a collaborative and iterative approach to software development and operations that aims to enhance communication, collaboration, and efficiency between development teams (Dev) and operations teams (Ops). It involves the integration of people, processes, and tools to deliver high-quality software products and services more rapidly and reliably.



# Breaking Down the DevOps Lifecycle Stages

- **Plan:**  
Define project goals, requirements, and timelines. Collaborate with stakeholders to create a roadmap.
- **Code:**  
Write code and implement new features. Foster collaboration between developers. Encourage best coding practices and maintain code quality.
- **Build:**  
Compile the source code and transform it into an executable format. Integrate code changes from multiple developers. Perform code compilation and build artifact creation.
- **Test:**  
Conduct various types of testing. Automate test cases to ensure consistent and reliable results. Utilize testing frameworks and tools to identify and fix bugs and issues.
- **Release:**  
Package the tested and approved software into a release candidate. Create release documentation and update release notes.
- **Deploy:**  
Automate deployment processes. Utilize tools like containerization and infrastructure automation for seamless deployments.
- **Operate:**  
Monitor the deployed application's performance, availability, and resource utilization. Respond to incidents and troubleshoot issues. Continuously optimize application performance and scalability.
- **Monitor:**  
Collect and analyze data on application and infrastructure performance. Utilize monitoring tools to gain insights into system health, user experience, and application metrics.

# The Benefits of DevOps



## Increased Efficiency

DevOps enables teams to work together more efficiently, reducing the time it takes to develop and deploy applications.



## Improved Quality

DevOps helps teams to identify and address issues quickly, resulting in improved product quality.



## Reduced Costs

DevOps helps teams to reduce costs by automating processes and reducing manual labor.



# The **Benefits** of DevOps



## Scalability

DevOps provides the scalability benefit of being able to quickly and easily scale up or down to meet changing demands.



## Continuous Improvement

Continuous Improvement is a key benefit of DevOps, which focuses on continuously improving processes, products, and services.



## Faster Time to Market

DevOps promotes rapid and frequent software delivery, reducing the time between development and deployment.

**“DevOps is about collaboration and communication between teams, not just technology.”**

# Popular **Tools** Used in DevOps



**Linux OS**

Linux is an open source operating system that is based on the Linux kernel and is widely used in server and embedded systems.



**AWS**

Amazon Web Services is a cloud computing platform that provides a wide range of services, such as compute, storage, and networking.



**Terraform**

Terraform is an open source infrastructure as code software tool that enables users to define and provision a data center infrastructure using a high-level configuration language.

# Popular **Tools** Used in DevOps



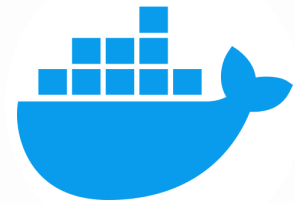
**Git**

A version control system used to track changes in source code over time.



**Jenkins**

Jenkins is an open-source automation server that facilitates continuous integration and delivery by automating the building, testing, and deployment of software applications.

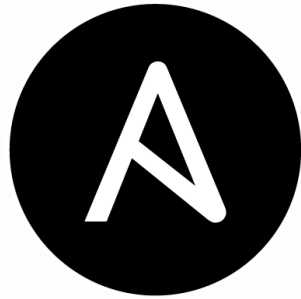


**Docker**

A container platform used to package and deploy applications.



# Popular **Tools** Used in DevOps



**Ansible**

Ansible is an open-source automation platform used for configuration management, application deployment, and task automation.



**Prometheus**

Prometheus is an open-source monitoring system used to collect metrics from applications and services.

