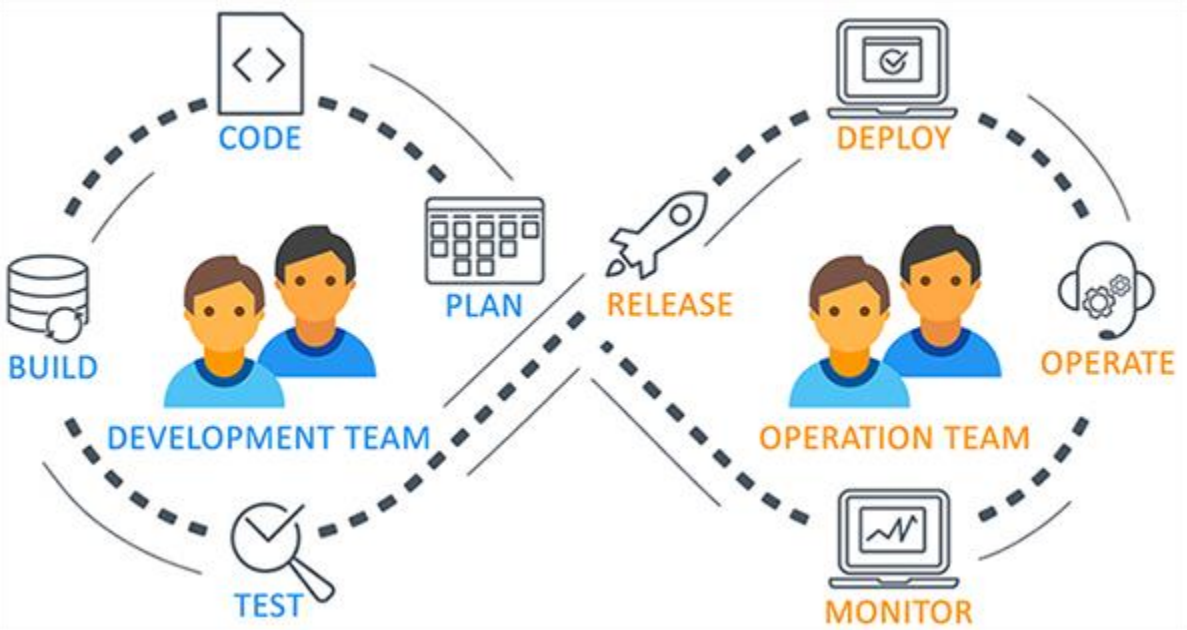
What is DevOps

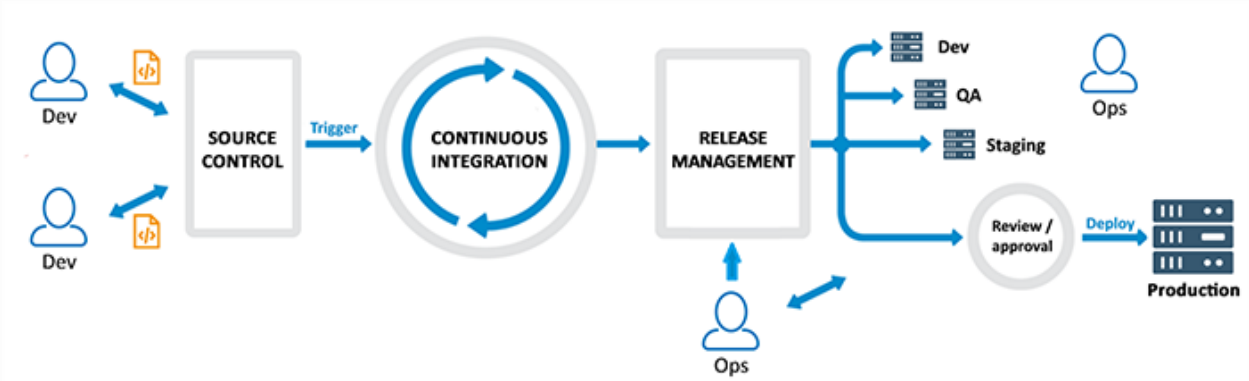
DevOps is Development and Operation's Collaboration, It's a Union of processes, People, and Working products that enable continuous integration and continuous delivery of value to our end users. DevOps accelerate the process to deliver applications and software services at high speed and high velocity. So that organizations can learn and Adopt the market at its earliest. Also, it minimizes the risk factor by continuously delivering and getting end-users and stakeholders' feedback at the early stages.

The intense peer relationship between the words "Dev" and "Ops" defines each two phase of the DevOps lifecycle, i.e. starting from the initial software analysis & planning to define the codebase, build the application, end to end testing, and product release phases and on to deployment, operations, and ongoing software monitoring. The combination of two propels drives to the seamless continuous customer feedback loop for the continious improvement, development, testing, and the application deployment. The end result of these improvement efforts can be the highly rapid, continual release of necessary feature changes or additions based on the business aspects and the overall success of the client product.



How DevOps Works

DevOps is the practice of operations and development engineers that work together in the entire project lifecycle, from the design and development process to product releases and support.



Starting from design and development to testing automation and from continuous integration to continuous delivery, the team works together to achieve the desired goal. People having both development and operations skill sets work together and use various tools for CI-CD and Monitoring to respond quickly to customers' needs and fix issues and bugs.

Benefits of DevOps

Following are the main benefits of DevOps Practices.

Break down the Silos

I believe the most important benefit of using DevOps is to break down the Silos as the Cross-functional development team and operation teamwork together which is possible due to the self-organized approach to work.

Speed

Delivering the highest business value item quickly and faster product delivery in the market as DevOps follows Agile Principles.

Faster in pace and multiple frequent deliveries of the desired updates and features will not only fulfill the requirement of the customers but will also help your organization to take a firm stand in a competitive market.

Rapid Delivery

Frequently release the working product in the market to satisfy the market and more importantly customer's need, which improves the ROI (Return on investment).

Reliability

By following DevOps best practices and using the best tool for Continuous Integration, Testing Automation, and Continuous Delivery, and monitoring the logs helps the team to stay updated and take the real-time decision quickly.

Team Collaboration

DevOps improves the collaborations between the Dev Team and Ops Team, Team works together towards the common business goal. DevOps Break the silos and focus on Communication, Transparency, Inspection, Adaption, and Integration.„/p>

Security

While implementing automation Security is a very important factor, By Following the DevOps model and using Infrastructure as code and by doing automation of process and compliance policies, one can take control of security configuration.

Risk Management

Using this practice we can Identify the risk factor early in the application lifecycle stages. Early detection of any issues or bug and quick correction or fixes helps to stay ahead in the competition.

Software Quality

Extensive collaboration between the activities such as product development and the operation teams and frequent collection of customer feedback may leads to a significant improvement in the overall quality of the product.

Why DevOps Matters

In today's competitive software Industry, Automation and AI plays a major role, and to stay ahead in the market and attract your stakeholders and customer we must transform and adapt the DevOps Best Practices. So Why do you need DevOps in the First place, Well

- To stay ahead in the market as competitors are already doing this.
- To increase the velocity of the team as well as product delivery.
- To reduce downtime and within a minimum time limit, update the changes on the production.
- To reduce human error by doing all work automated.

DevOps Model Adaption

In any company the transformation from Waterfall to Agile and Agile to DevOps, we first must work on the people's mindset as I Explain that it is not a job or tool but it is a mindset. The team must work together and make their communication smooth, work more collaboratively and take the responsibilities to achieve the goal. The team must trust each other and maintain transparency. The second important things are to identify the tools that best suit for your project in terms of planning, code management, testing automation, continuous integration, continuous deployment, and monitoring, and start using that you can also go for Infrastructure as Code, to sum up, automate everything you can.

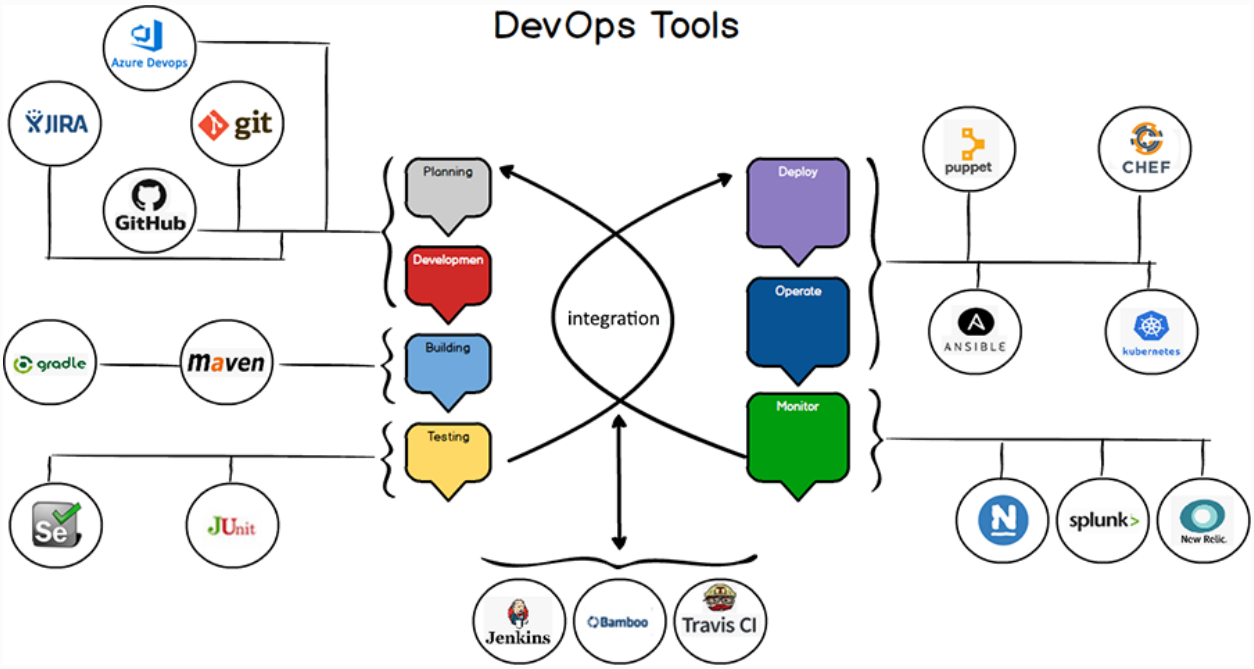
DevOps Tools

Following are the categories and Tools using which you can manage DevOps Practices.

Planning: You can use Jira or Azure DevOps Board to manage and plan your work in an Agile way.

Development: For code management, Git is the number 1 tool to manage your Code version History, branches, and Push and Pull mechanism in a distributed way. You can also use Microsoft TFVC (Team Foundation Version Control) which is a Centralized version control system.

Testing: To automate your testing you can rely on Selenium, JUnit, and Apache JMeter.



Build, Deploy, and Integration

For Integration we can relays on Jenkins, Travis CI, or Bamboo, to manage your application builds, and based on your application need we can use Maven or Gradle for Building and accelerating development and productivity. You can also go for Docker, Kubernetes, Chef, Ansible, and Puppet which are very famous tools for deployment.

Operating and Monitoring

Once your product is in right place, Operating and continuous monitoring play a major role here, and for that, we can use Nagios, Splunk, or New Relics. Using that one can manage Servers Networks and Applications.

By capturing the events during the development and analyzing the system logs generated by applications, the DevOps teams can identify and understand how software changes or updates may affect end-users or the customers who are going to use the services.