

DEVOPS Engineering Orientation

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About Digital Point

Training Methodology:

- Digital point is a global classroom.
- All our classes are online live(No recorded version) .
- Students around the world can join our online live classes
- The courses are very interactive and has lots of lab practice with it.
- Each Students will be given a remote Unix server for lab practice.
- We help you with Resume preparation, Interview preparation, before and after job support.

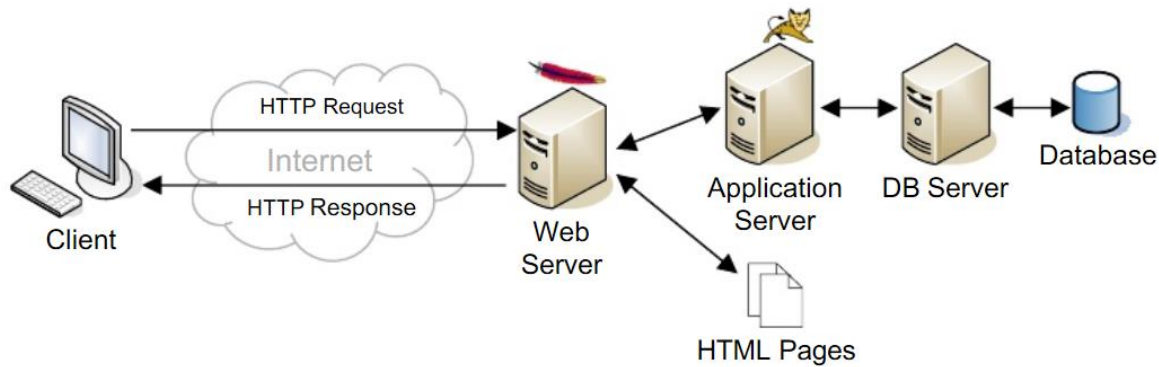
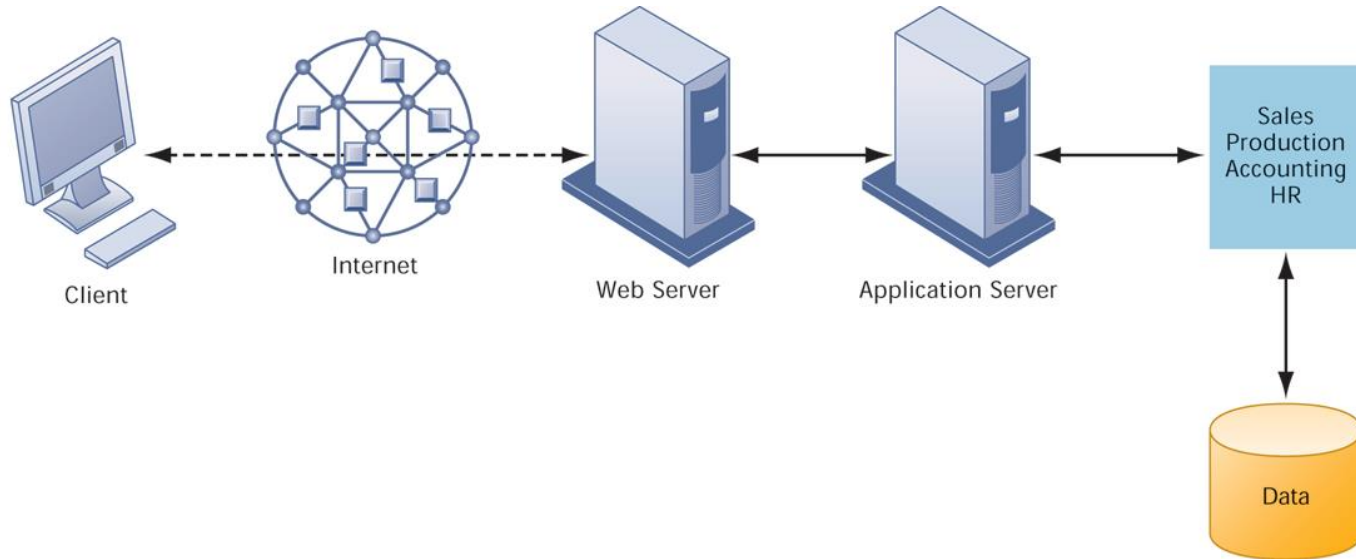


Training Methodology:

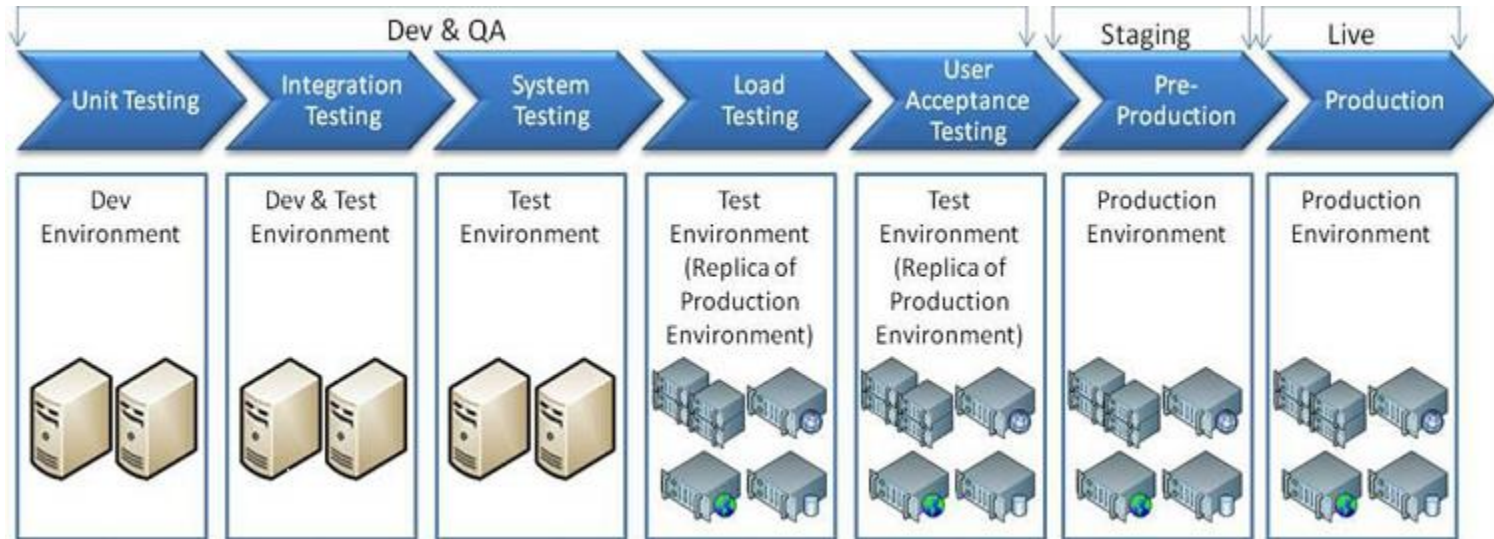
- VPN Server
vpn.digitalpoint.tech
- Video Recording
video.digitalpoint.tech
- Assignment and feedback
- Mentoring Class (once a week)
- Co-op opportunities (Selected Students)
<https://automationsolutionz.com/>



Enterprise Application Systems



Software Environment



A simplified look at the enterprise

Change Management

Business Customer



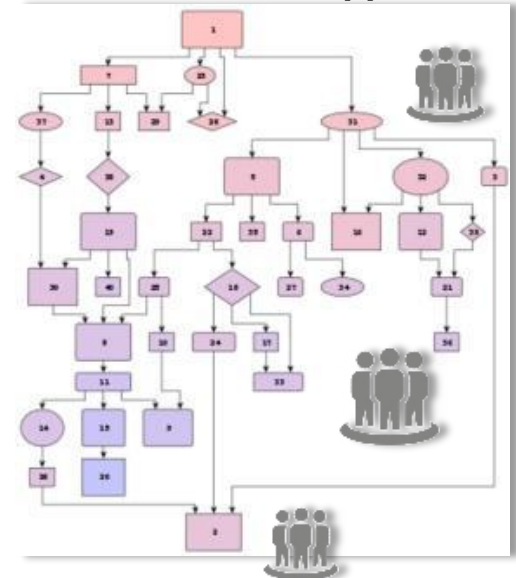
Security, Governance

Application Development teams



Security, Governance

IT Operations, Production Environments, Support





Waterfall Model

- Linear model of software design.
- Waterfall employs a sequential design process. Development flows sequentially from start point to end point, with several different stages: Conception, Initiation, Analysis, Design, Construction, Testing, Implementation, and Maintenance.

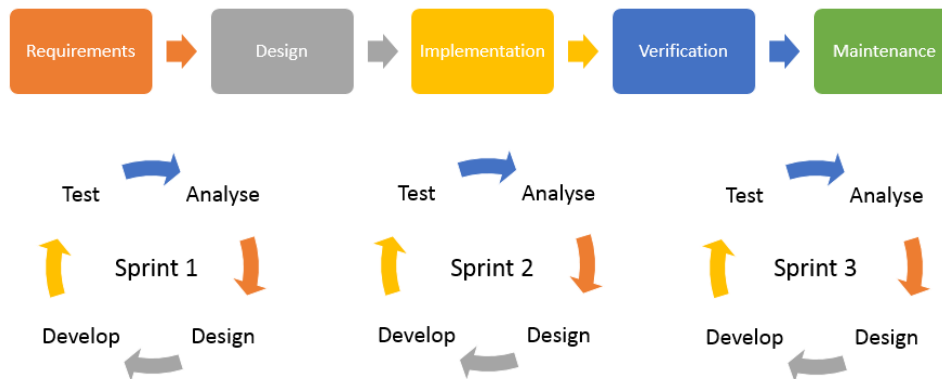
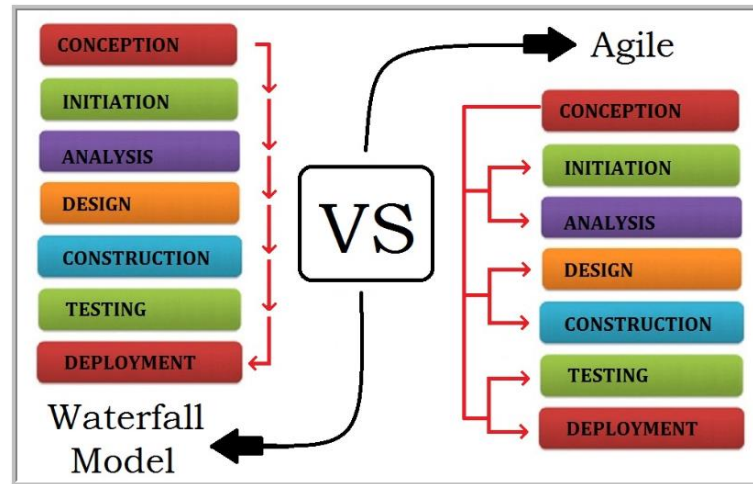
Agile Model

- Agile proposes an incremental and iterative approach to software design.
- There is no pre-determined course of action or plan with the Agile method
- Lightweight
- People-based rather than Plan-based



SDLC

Waterfall Model vs Agile Model:



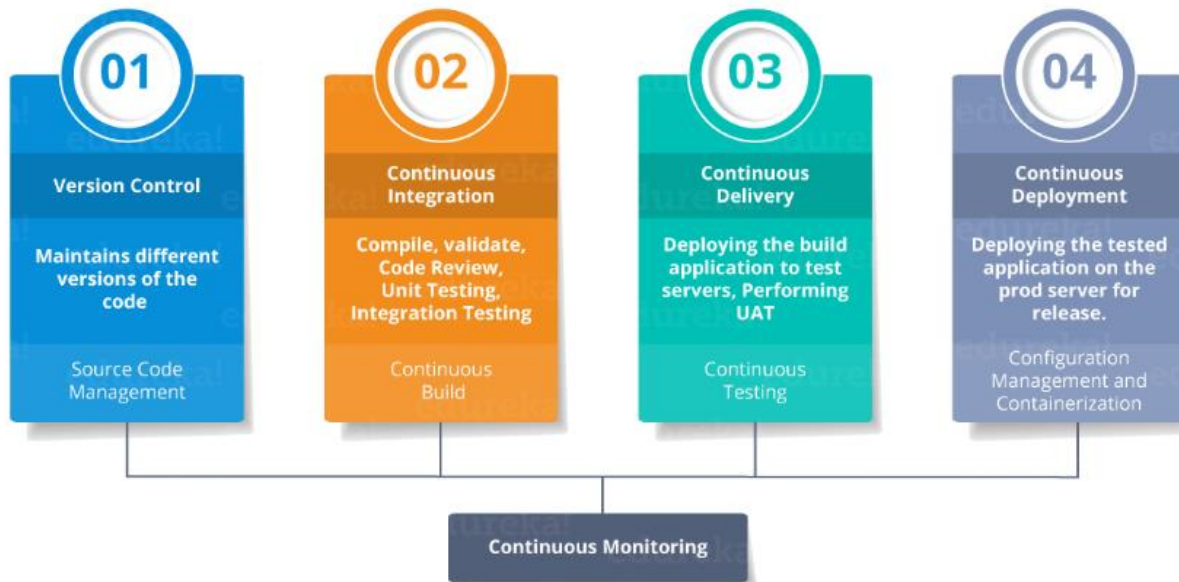
SCRUM:

- Scrum is an agile process that allows to focus on delivering the highest business value in the shortest time.
- It allows rapidly and repeatedly inspect actual working software (every two weeks to one month).
- The business sets the priorities. Development team to determine the best way to deliver the highest priority features.
- Every two weeks to a month anyone can see real working software and decide to release it as is or continue to enhance for another iteration.

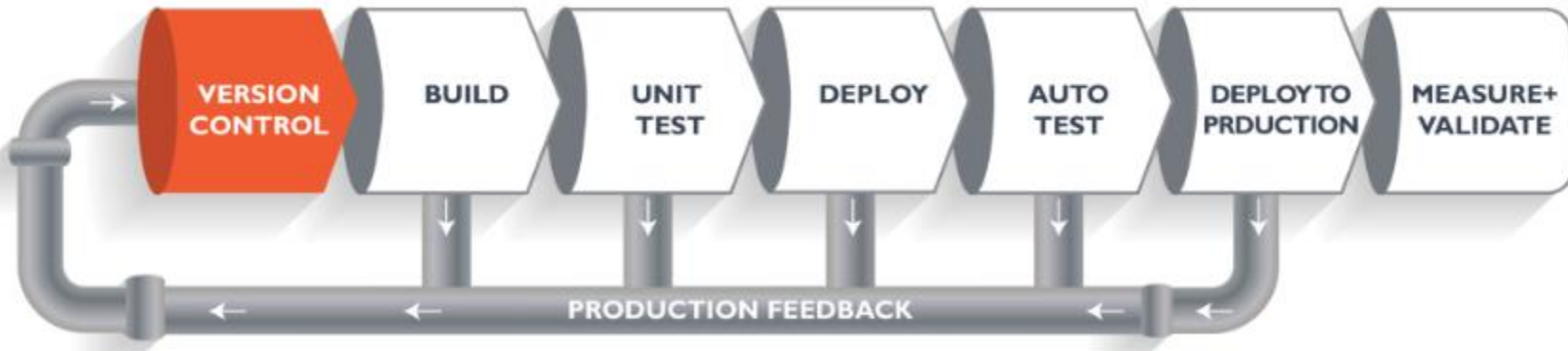


What is DevOps?

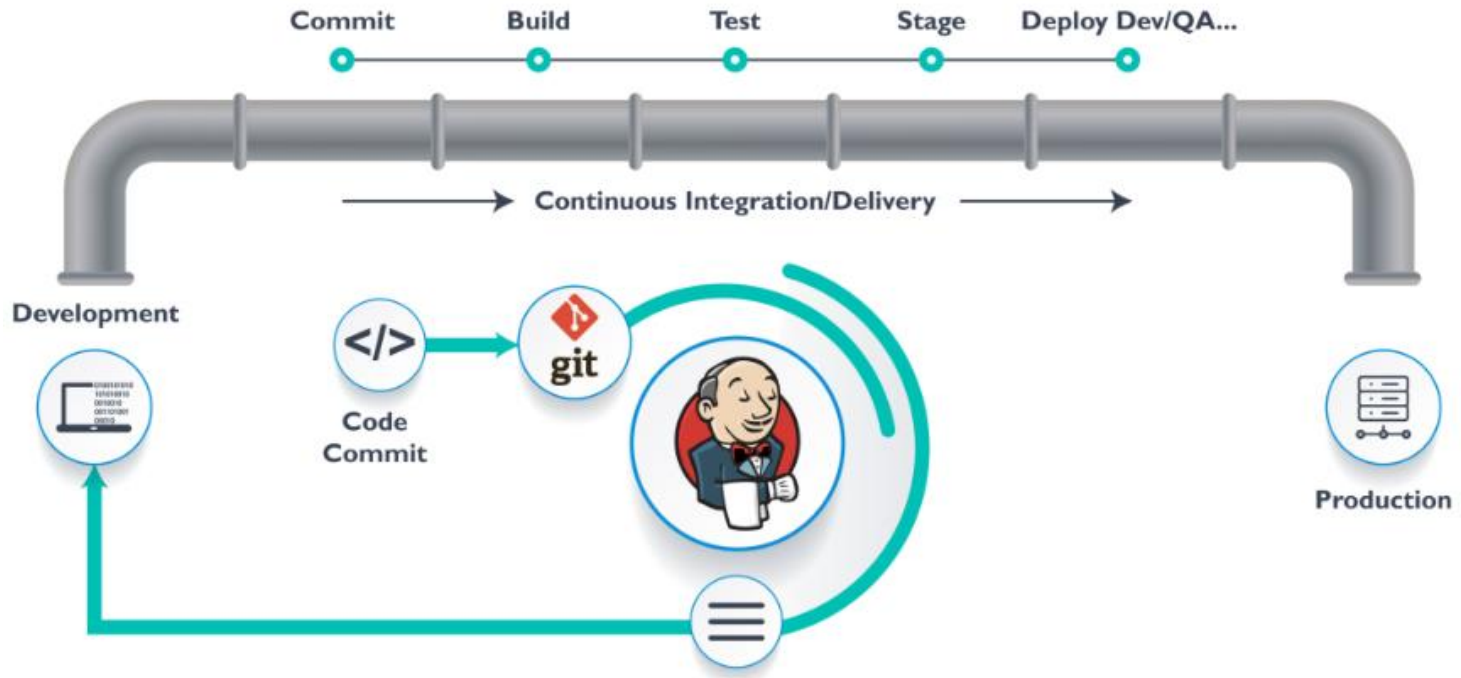
DevOps is a software development approach which involves continuous development, continuous testing, continuous integration, continuous deployment, and continuous monitoring of the software throughout its development lifecycle. This is the process adopted by all the top companies to develop high-quality software and shorter development lifecycles, resulting in greater customer satisfaction, something that every company wants.



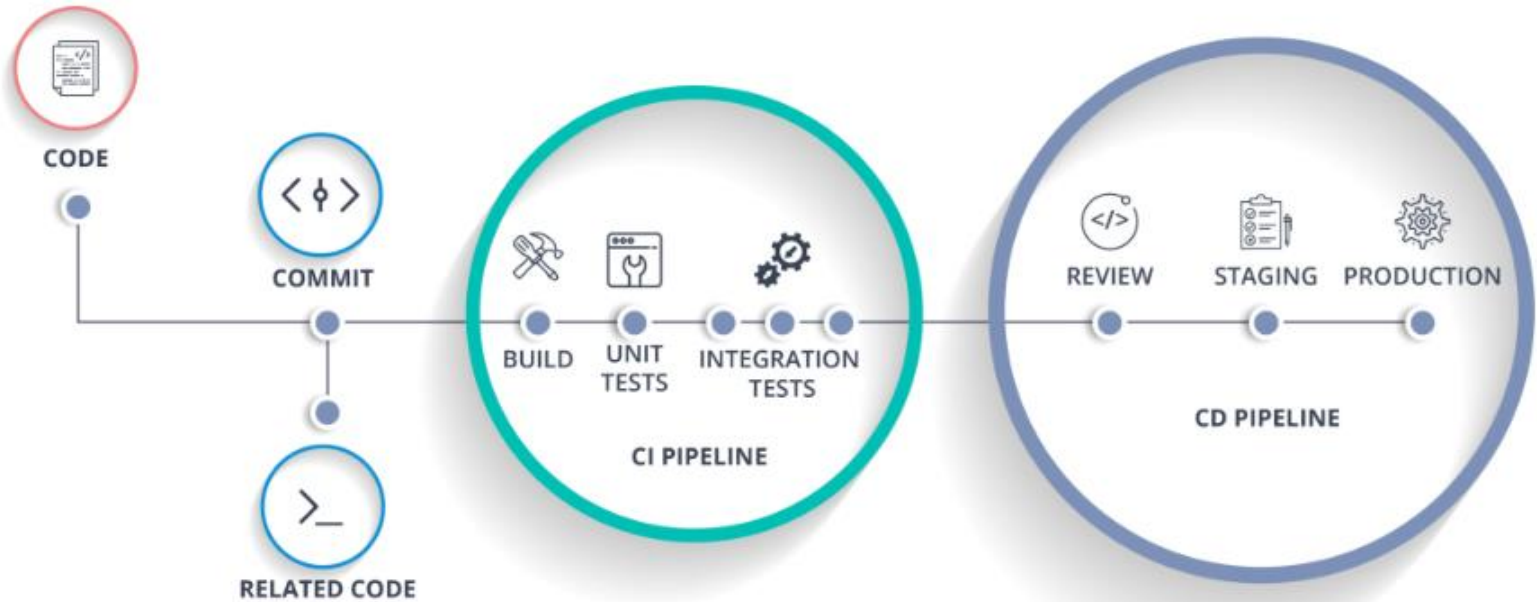
CI/CD Pipelines

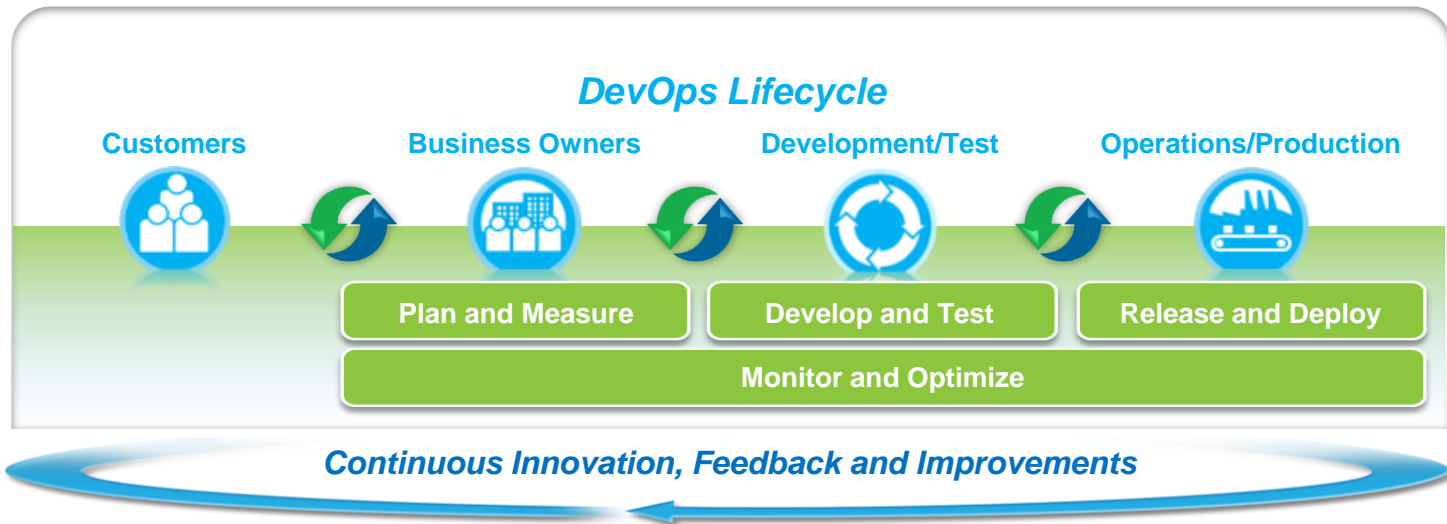


CI/CD Pipelines



CI/CD Pipelines





Accelerate Software Delivery

Expanding collaboration to include customers, LOB and others to eliminate organization silos

Balance speed, cost, quality and risk

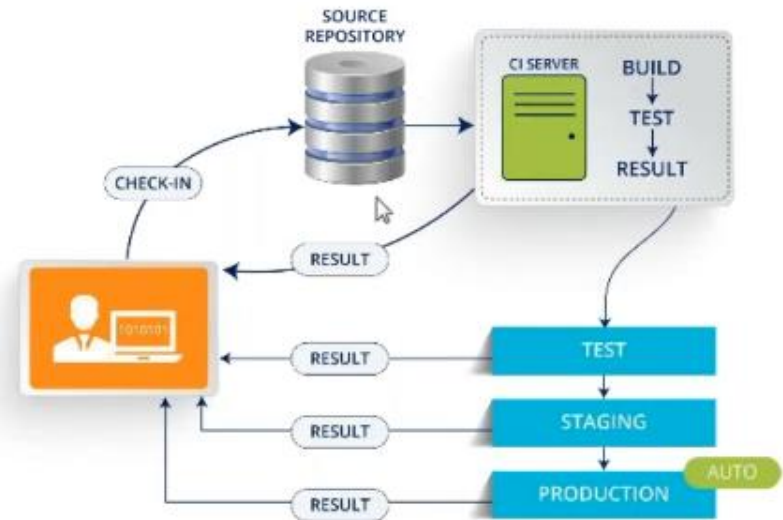
Automating manual processes across delivery lifecycle to eliminate waste/delays and compliance tracking

Reduce time to customer feedback

Enabling a customer feedback loop for continuous improvement

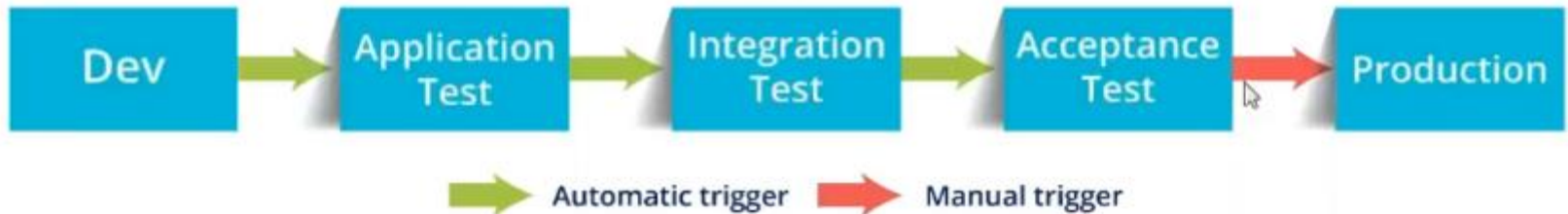
Continuous Development

Continuous Deployment is a **DevOps** practice where the code changes are automatically built, tested, and prepared for a release to production



Continuous Delivery vs Continuous Deployment

Continuous Delivery



Continuous Deployment

DevOps

Waterfall

Design

Code

Test

Deploy

Agile

Design

Code

Test

Code

Test

Code

Test

Code

Test

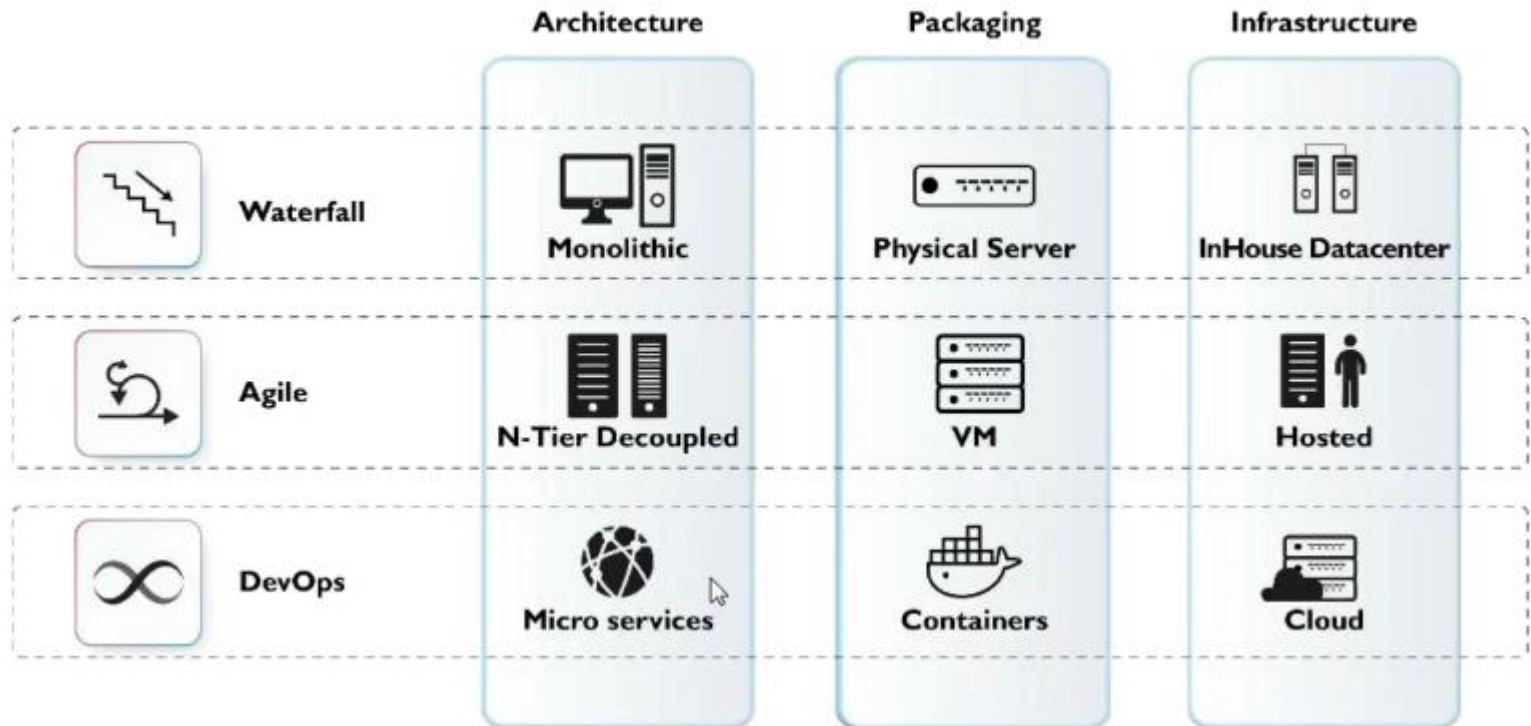
Deploy

DevOps

Design



What is Authentication?

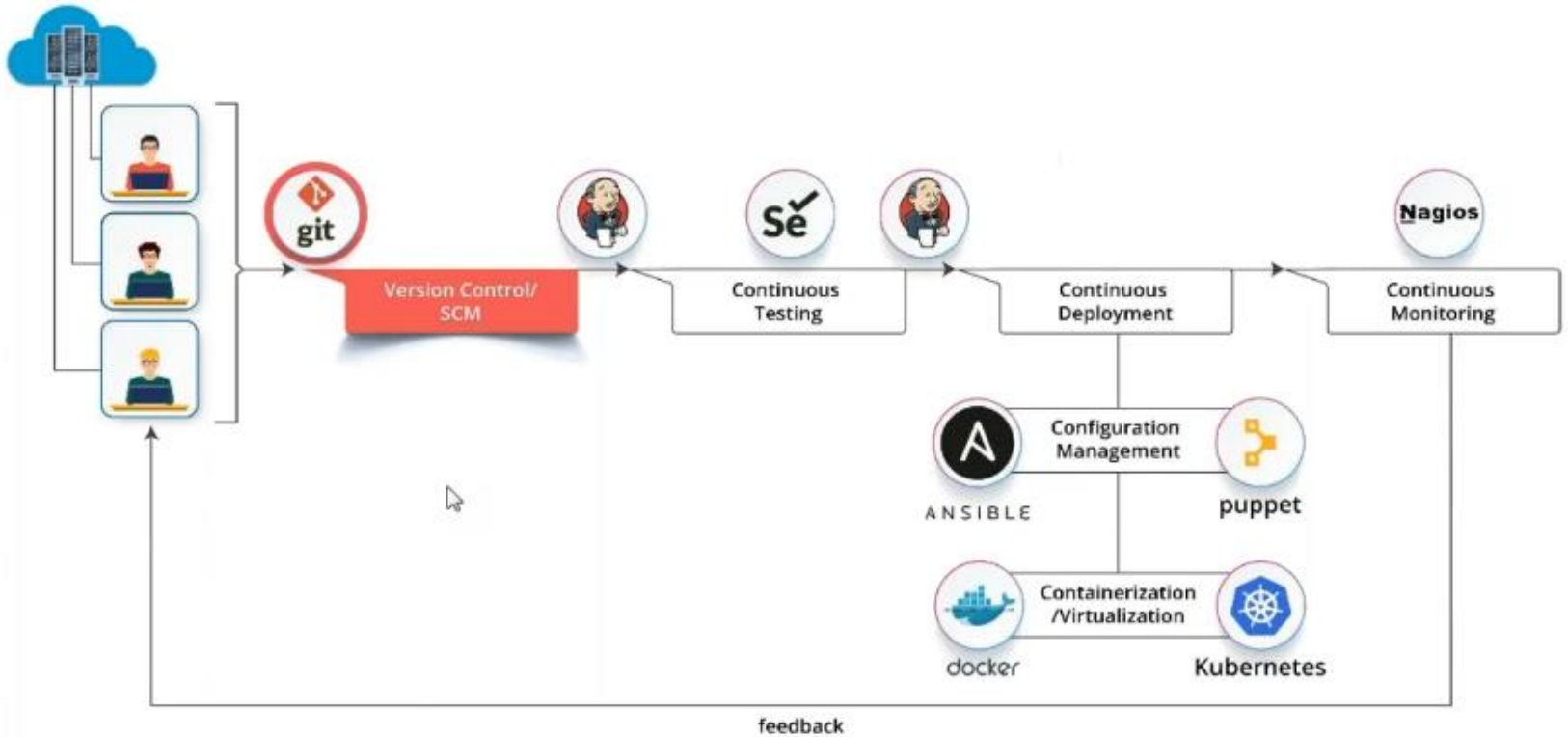


DevOPs Tools

- >> Git and GitHub – Source code management (Version Control System)
- >> Jenkins – Automation server, with plugins built for developing CI/ CD pipelines
- >> Selenium – Automation testing
- >> Docker – Software Containerization Platform
- >> Kubernetes – Container Orchestration tool
- >> Puppet – Configuration Management and Deployment
- >> Chef – Configuration Management and Deployment
- >> Ansible – Configuration Management and Deployment
- >> Nagios – Continuous Monitoring

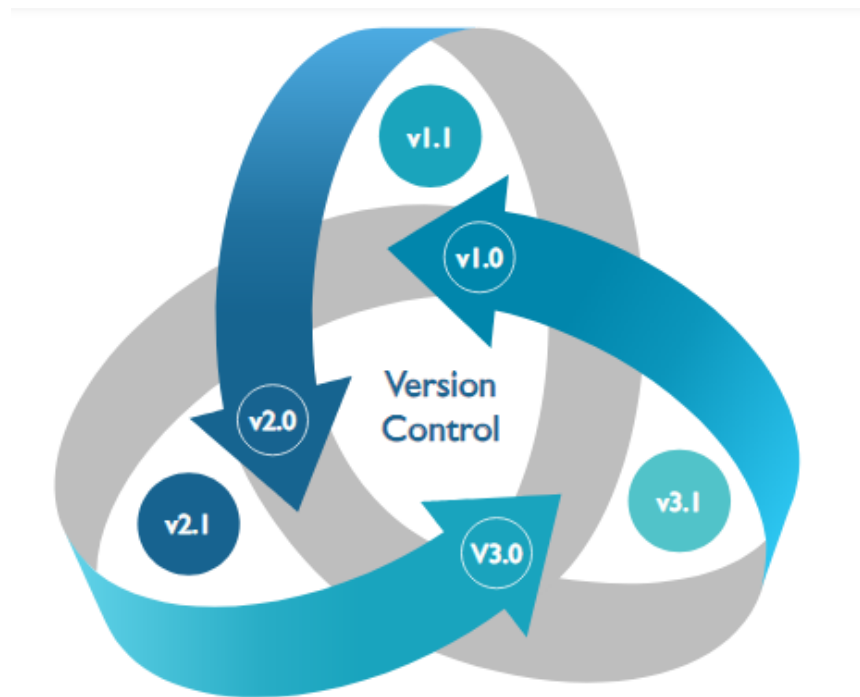


DevOPs Tools



What is Version Control ?

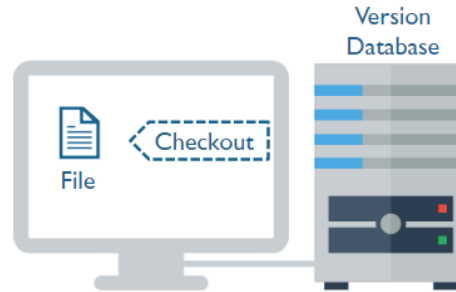
Version Control is a system that documents changes made to a file or a set of files. It allows multiple users to manage multiple revisions of the same unit of information. It is a snapshot of the project overtime.



Version Control

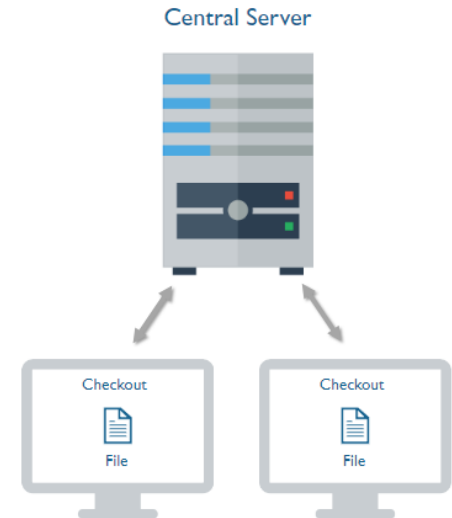
Local Version Control

- The practice of having the Version Database in the local computer
- Local database keeps a record of the changes made to files in version database



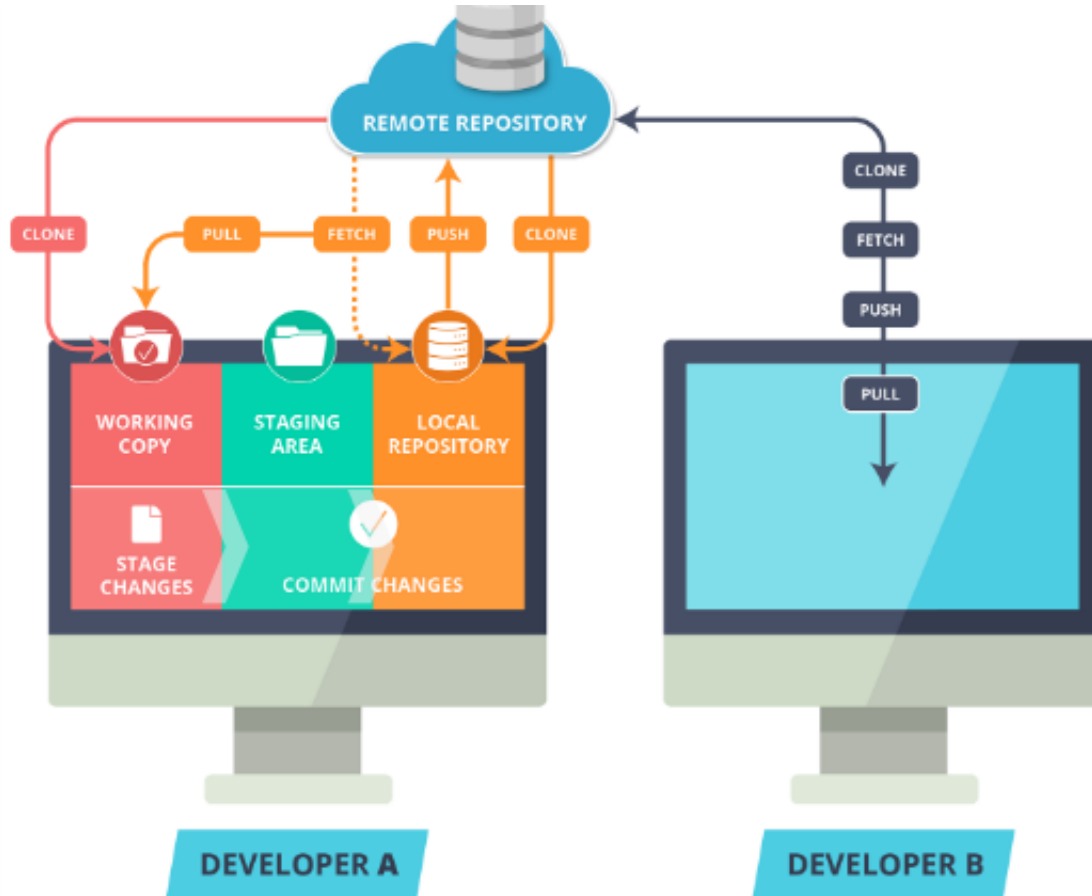
Centralized Version Control

- Local Version Control's issues are resolved by Centralized Version Control
- In CVC, a central repository is maintained where all the versioned files are kept
- Now users can checkout, and check-in files from their different computers at any time



Version Control

GIT



Software Testing Automation - Selenium

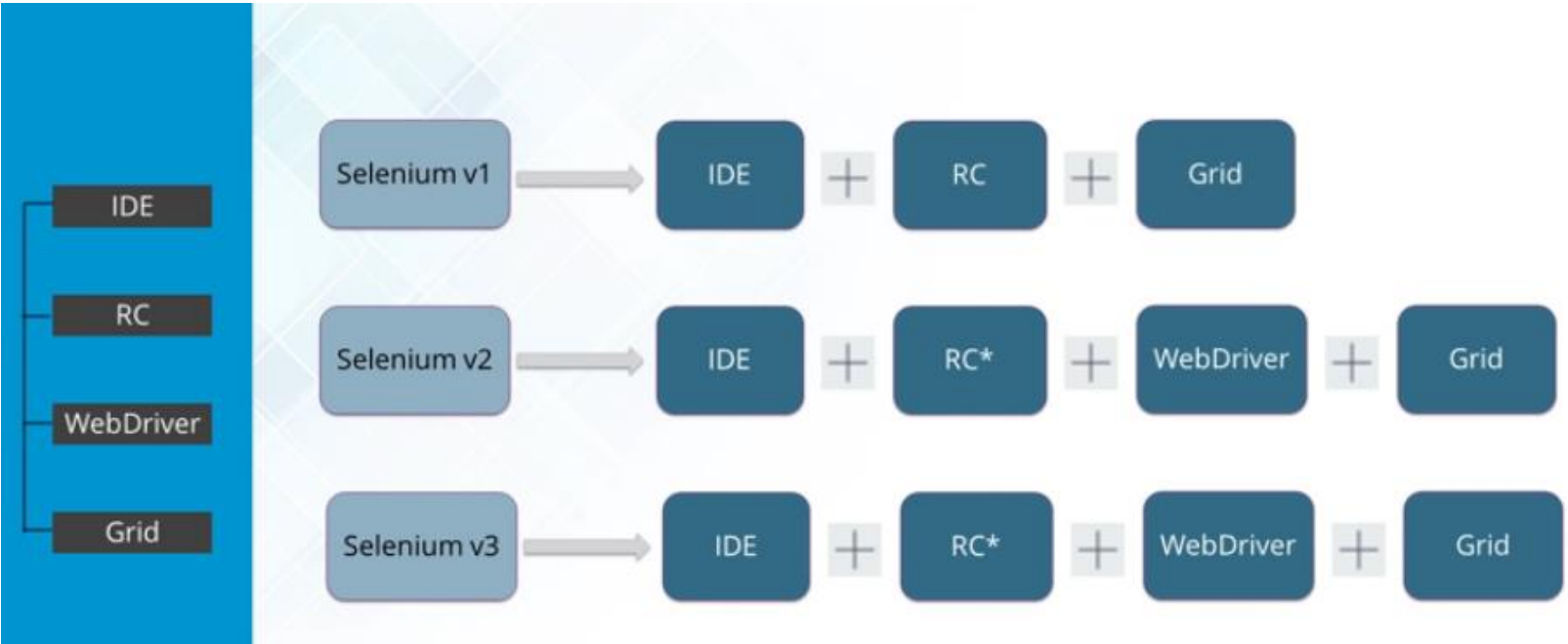
Selenium is a suite of software tools to automate web browsers.

It is open source and mainly used for functional testing and regression testing.



- Supports different PL → [Java](#), [Python](#), [C#](#), [PHP](#), [Ruby](#), [Perl](#), [JavaScript](#)
- Supports different OS → [Windows](#), [Mac](#), [Linux](#), [iOS](#), [Android](#)
- Supports different Browsers → [IE](#), [Firefox](#), [Chrome](#), [Safari](#), [Opera](#)

Software Testing Automation - Selenium



Configuration Management

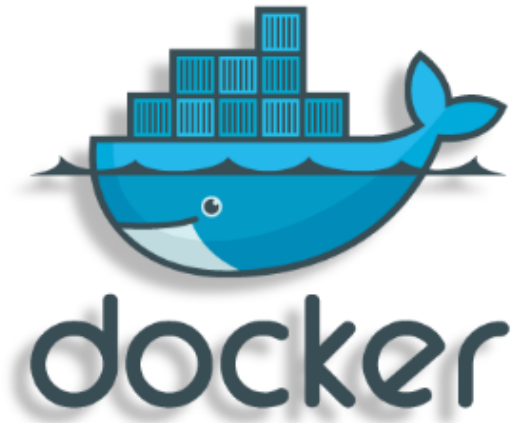
Puppet is a configuration management tool used to manage and maintain development and deployment of software systems and servers in any computational environment



Docker

“BUILD, SHIP & RUN ANY SOFTWARE ANY WHERE”

- Docker is a tool designed to create, deploy, and run applications with ease by using containers
- It allows a developer packaging of an application with all of the requirements such as libraries and other dependencies, ship it all as one package
- It ensure that your application works seamlessly in any environment; be it Development, Test or Production



Docker



Develop an app using Docker containers with any language and any toolchain.

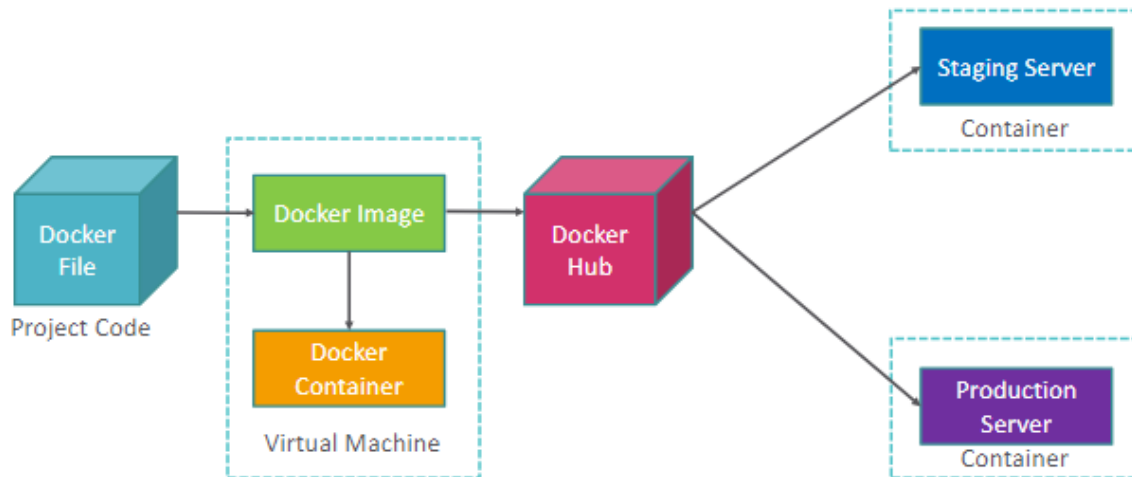
Ship the "Dockerized" app and dependencies anywhere - to QA, teammates, or the cloud - without breaking anything.

Scale to 1000s of nodes, move between data centers and clouds, update with zero downtime and more.

Docker



- Docker file builds a Docker image which contains all the project's code
- You can run that image to create as many docker containers as you want
- The created Images can be uploaded on Docker hub from where the image can be pulled and built in a container



Operations Challenges

Ops Challenges

DevOps Solution



- Difficult to maintain uptime of the production environment

- Containerization / Virtualization ensures simulated environment to run the software as containers in turn offering great reliability for service uptime



- Tools to automate infrastructure management are not effective

- Configuration Management helps you to organize and execute configuration plans, consistently provision the system, and proactively manage their infrastructure



- No. of servers to be monitored increases

- Continuous Monitoring



- Difficult to diagnose and provide feedback on the product

- Effective monitoring and feedbacks system is established through Nagios
- Thus effective administration is assured





For additional questions or comments please send an email to:
admin@digitalpoint.tech