

DevOps

what is DevOps? Actually in Software Industry we have 2 domains

- * Development team (Plan, Code, Build, Test)

- * Operational team (Deploy, Operating, Monitor)

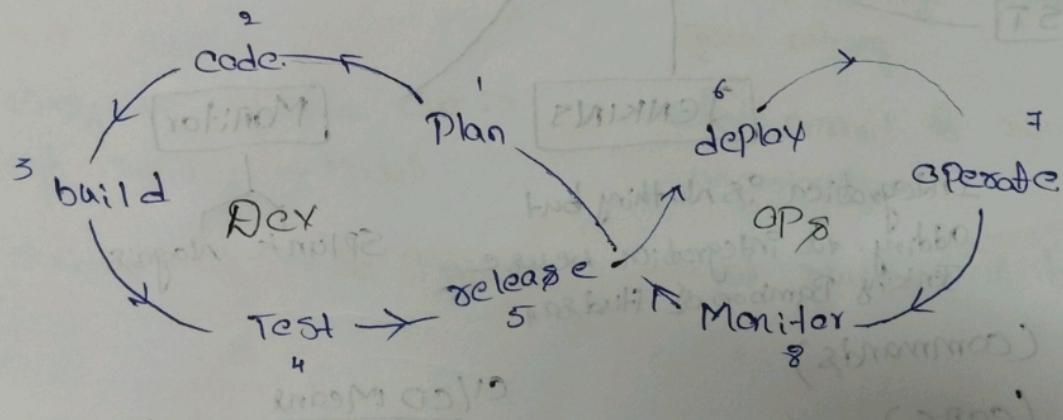
→ DevOps is nothing but the combination of Development team & Operational team.

$$\text{DevOps} = \text{Dev} + \text{Ops}$$

→ DevOps is not a tool technology or framework.

→ In DevOps our Application will be delivered without any Performance issue, without any bugs, with Rapid speed.

Logo of DevOps represents infinite, because it is a never ending Continuous Process (∞)



DevOps History

→ DevOps was originated in the year 2008.

→ Originally it was a discussion b/w 2 people called Andrew Clay & Patrick Debois.

→ In 2009 they held a summit at Belgium where they have discussed what if devops comes to the market.

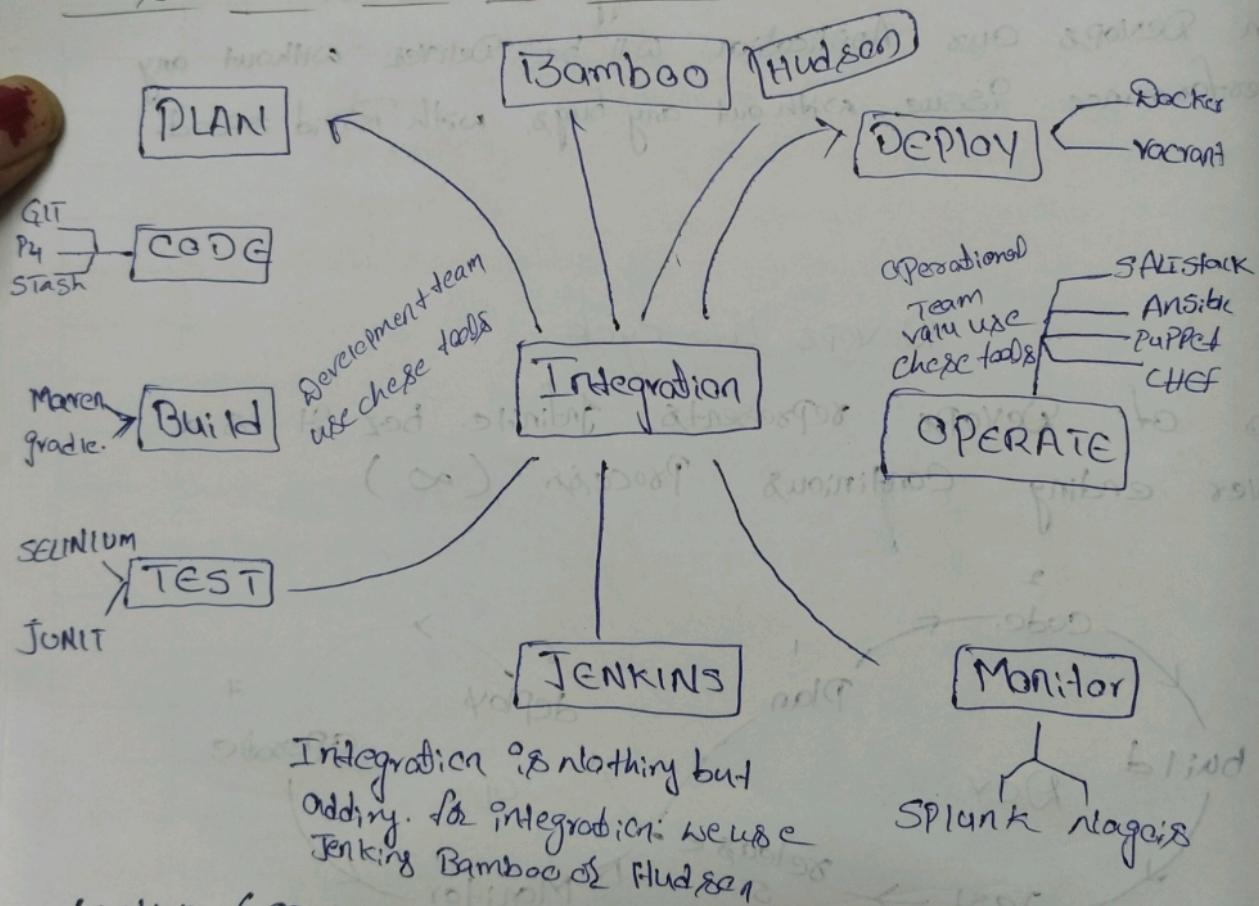
→ In 2014 the annual state of devops report was published.

→ Father of devops is Patrick Debois

What do DevOps Engineers do:-

- understands the Software development life cycle (SDLC) & has the outright understanding of various automation tools for developing digital pipelines
- works with developers & the IT staff to oversee the code releases.
- He Introduce new methodology TO Implement the Process quickly
- He has the knowledge of both development team & Operation team.

Tools we use in DevOps :-



Linux (Commands)

GIT (CODE)

Maven (BUILD)

JENKINS (Integration/CI/CD)

ANSIBLE (Configuration)

Deploy (Docker)

Monitoring (Nagios)

CI/CD Means

CI - Continuous Integration

CD - Continuous Delivery / Deployment

Before Develops

* Before DevOps we have 2 Methods.

→ Water fall Methodology

→ Agile Methodology.

1. Waterfall Methodology

Requirement (Require)

Design (Software architecture)

Implementation (construct the Software)

Verification. (Install, test & Deploy)

Maintenance (check error, optimise)

(It is a step by step process here we have to wrap up before the next step begins

Advantages \ominus Disadvantages \ominus water fall Methodology

Advantages

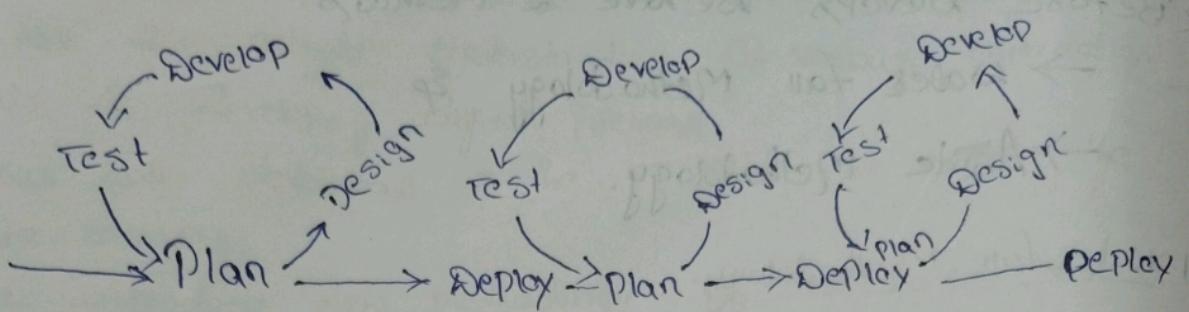
Disadvantages

→ Simple & easy to use. → You cannot go back a step if the design phase has gone wrong

→ Easy to maintain due to high rigidity of Model → high amount of risk esp. uncertainty

→ suitable for small Projects → not suitable for big Projects

2. AXILE Methodology

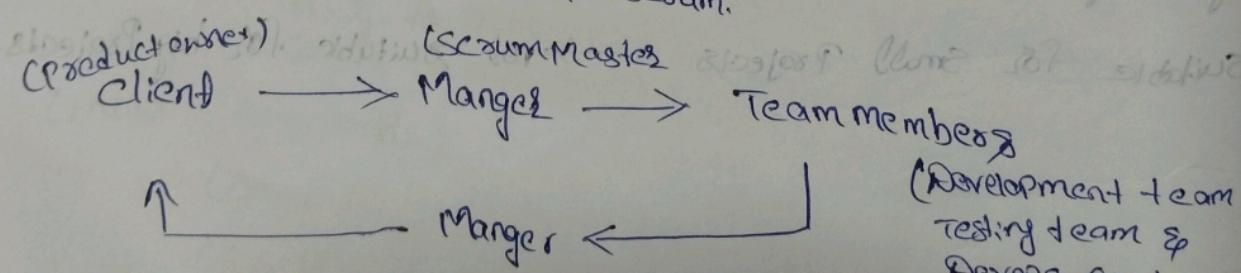


- Here Time line of Project fixed.
 - Agile methodology is a way to manage a Project by breaking it up into several Phase
 - Continuous Improvement at every state.
 - Here Development & testing are going Parallel

Scouring

- It is a sub-group of Agile
 - It is a framework that helps to improve team work together.
 - Each sprint starts with a brief planning meeting and ends with a review meeting.

Discussion is nothing but Scrum(Meeting) who will be there. In Scrum.



SPoint = time / Target

Sprint goal :- What we deliver in sprint
goal. (Target)

SPoint Backlog: - The list of tasks to be completed during the SPoint To achieve that goal.

Roles & Responsibility of DevOps Engg

- We need to work on CI/CD Pipelines
- We have to automate daily tasks
- We have to know cloud/service/network architecture
- We have to manage infrastructures
- Cloud Migrations
- Continuous Monitoring
- To make sure that the pipeline working smoothly
- collaborate with all team

Linux Commands

Next DevOps

GIT (Code & No GIT tool)

Maven (Build ..)

Jenkins (Integration & CI/CD)

Ansible (Configuration (100 servers to manage))

Docker (Containerization Tool)

Kubernetes

NAGIOS (Monitoring)

Terraform (Infrastructure)

AWS Service (Up to 15 service)

Top 10 Cloud Providers

1. AWS

2. Alibaba

3. Salesforce

4. Digital Ocean

5. Dell

6. Dropbox

7. Google

8. Tencent

9. Azure

10. IBM

11. GCP