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TE1,80

THADOMAL SHAHANI TSEC ENGINEERING COLLEGE

SEPM ASSIGNMENT-2

AIM: to understand DevOps: principles, practices and DevOps engineer roles and responsibility.

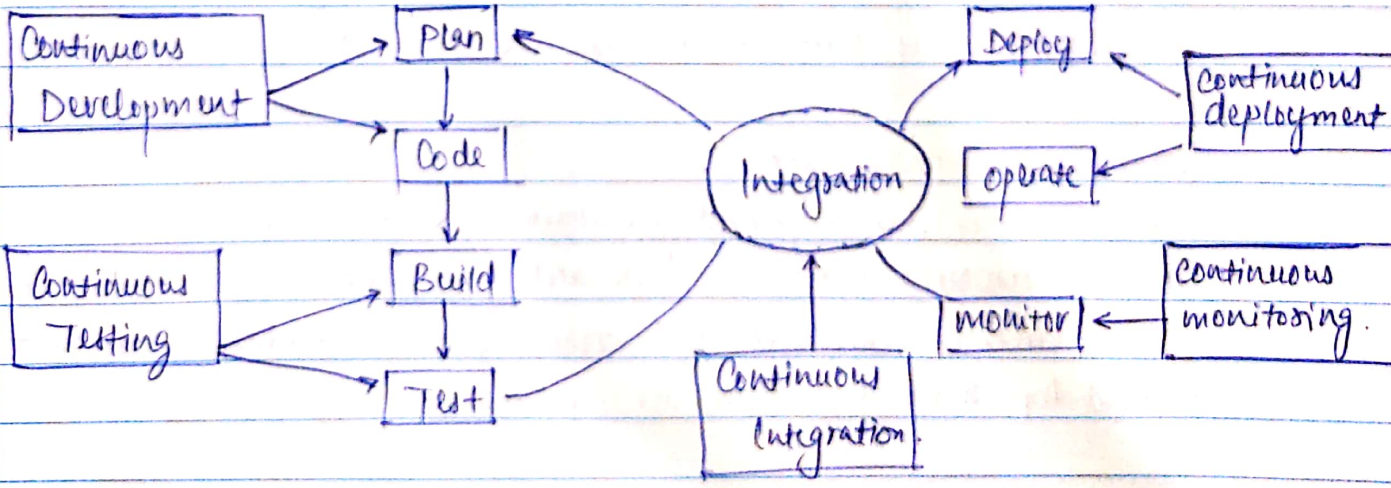
What is DevOps?

DevOps is a collaborative approach where team works together to build and deliver secure software securely & efficiently. It combines software development and operations to decide how to accelerate delivery through automation, collaboration, fast feedback and iterative improvement. Built on Agile methodology, DevOps creates a culture of accountability, collaboration, fast feedback and shared responsibility.

Core principles:

- Develop and test in production like environments.
- Deploy build frequency.
- Continuously validate operational quality.

DevOps practices:



Continuous development:
This is the phase that involves planning and coding, versioning and managing build of the software app's functionality.
ex: git, github, maven etc.

Continuous testing:
Executing automated tests, continuously and repeatedly against the code base and various deployment environments. Software methodology which involves testing and focuses on acheiving continuous quality & improvement.
ex: bamboo, appium

Continuous integration:
refers to the build and unit testing stages of the software release processes. Every revision that is committed triggers an automated build and test-
ex: Jenkins, travisCI, circle.

Continuous Delivery and deployment:
Originates from continuous integration, a method to develop, build and test new code rapidly with automation, so that only code that is known to be good becomes part of a software product.

Infrastructure management
w/o automation, building and maintaining large scale modern IT systems can be a resource intensive task and can lead to increased risk due to manual error. configuration and resource management is an automated method for maintaing computer systems

Configuration management
infrastructure as code is the practice of describing all software runtime environment and networking settings and parameter in simple textual format, that can be stored in your version control system. and versioned or requested.

Microservice architecture.
Docker is a tool designed to make it easier to create, deploy and run app^ns by using containes. It allows a developer to package an app^n with all of the parts it needs such as binaries & other dependencies & deploy it as one package. By doing so, devs can be sure that the app^n can run on any linux machine regardless of any customized settings.
ex: splunk etc.

Cloud based Devops:
Devops automation is becoming cloud centric. Most public & private cloud computing provides support, Devops systematically on their platforms, including continuous integration & continuous development tools.
ex: amazon web service, amazon lambda, google cloud etc.

Devops engineer roles

A devops engineer manages a company's IT infrastructure, bridging development and operation. key responsibilities includes:
Technical Responsibilities:
- implement dev, testing and automation tools.
- set up infrastructure and tools
- code review and responsibilities.
- Bug finding and troubleshooting.
- Security implementation and monitoring.

Management Responsibilities :

- Understand customer requirements and APIs.
- Plan team structure and activities.
- Manage Stakeholder.
- Define development and operational processes.
- Monitor customer experience.
- Provide periodic progress reports.
- Mentor team members.