DevOps in AWS

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Why Devops

It is basically a idea or thinking which is implementing to slove the problem that we are faeing between developement and operation team using various automation tools.

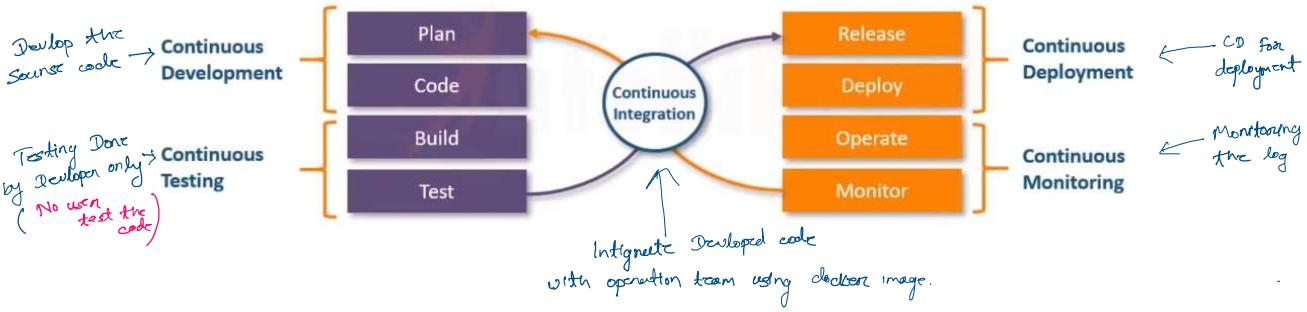
	Traditional IT	Devops
1)	less productive	→ More productive
2)	Skill centric Team	→ Team is divided into specialized silos
3)	More time invested in planning	→ less time for planning and easy to release update
4)	Difficult to achive target or goal	→ Achive target easly.

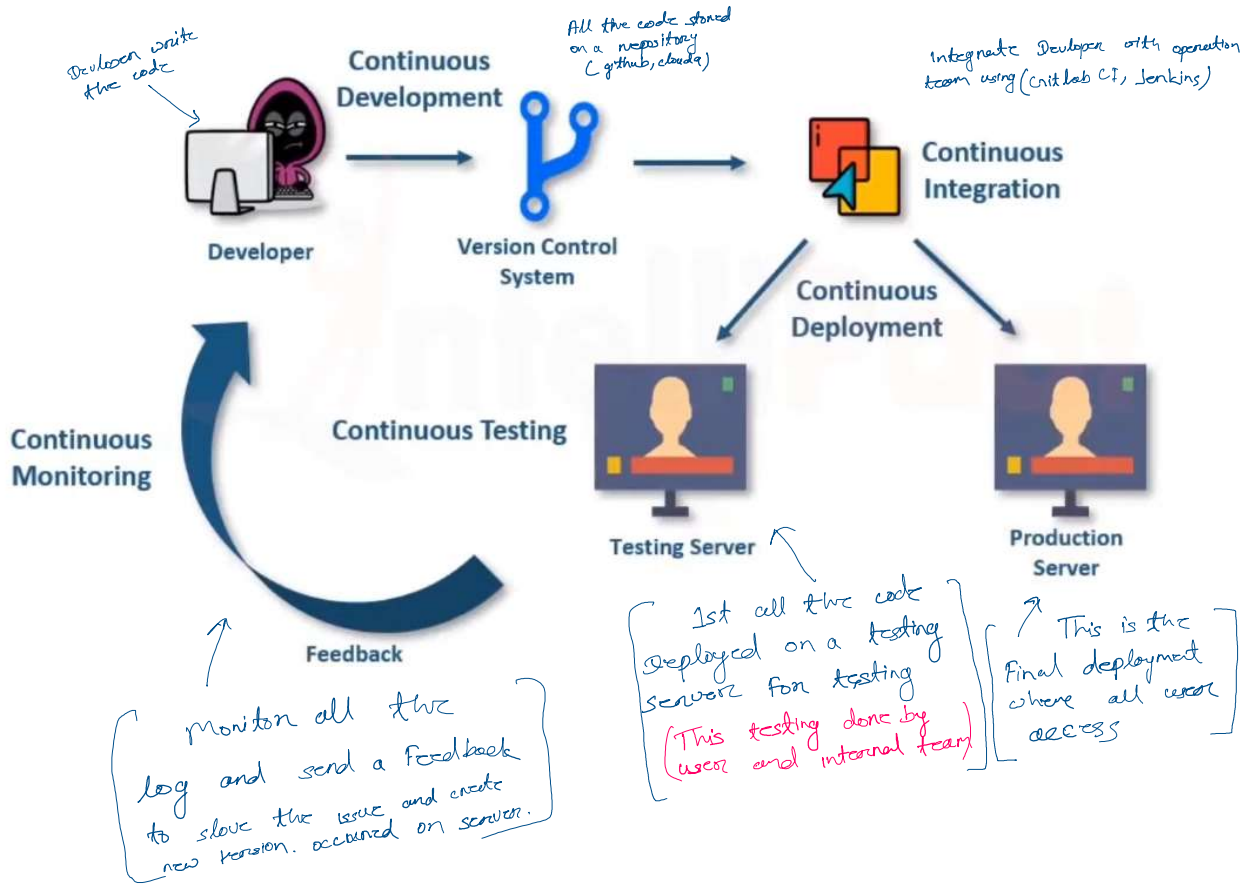
Devops lifecycle.

Devops automation tools are implemented using various stages which are a part of the Devops life cycle.

1) Planning → Plan what you have to do
2) Code → Write code according to planning
3) Build → Build your code so that it run in any platform (like In Java we build class file)
4) Testing → Test the code (Each module and function)
5) Release → Release code to operation Team so that operation team work on it (Dev → Create Docker Image, ops → Deploy the image file)
6) Deploy → Operation team deploy the code on production server for testing and checking.
7) Operate → Here we operating the software for internal employee or customer to check load and traffic
8) Monitor → In all these phase any error occured then a error log file generate to identify the error in monitoring phase.

Working of Devops life cycle.





Continuous Development

We basically write the code and push the code to a version control system like git etc. when pushing the code it create a version of each push code.

Continuous Integration.

It integrate Development team with Operation team.

It deals with integrating the different stages of the devops lifecycle, and is therefore the key in automating the whole devops process.

Continuous Deployment.

It means deploy the code in a particular server like testing server or production server.

In this stage the code is build, the environment or the application is containerized and pushed on to the desired server.

The key process in this stage are configuration management, virtualization, and containerization.

Continuous Testing

Continuous testing is the phase where all testing parameter set on a testing server then deploy the software on that server. The server automatically test the software accordingly the testing parameter.

If there is an error, the message is sent back to the integration tool, this tool is notify developer of the error.

If all test case pass then the software send to production server.

Continuous Monitoring

Once code deployed on production server it monitored for user activity, monitor for errors, it also monitor for version upgrade.

This stage continuously monitor the deployed application for bugs or crashes.
It also get feedback from end user.
The collected data is sent to the developers to improve the application.

DevOps tools

Continuous Development

In this stage we use git for version control.
git is a version control system is used when multiple developer working on a same project and it create for tracking changes on code.

Continus integration

Jenkins is an open source automation server written in Java
It helps to automate software development process.
When it detect new version push on git it automatically deliver it for deployment.

Continuous Deployment

Continuous Deployment means (i) Configuration management.
(ii) Virtualization and Containerization.

Containerization:- It wrap the software along with all dependency of that s/w. If the container file run any other system it run properly as similar to developer system because all dependency already install through container.

Tools → Docker, container.

Configuration management:- It automatically install required dependency before deploying the software.

Tools → Puppet, ansible.

Continuous Testing.

Selenium portable software testing framework. used for web application.

It is a open source tools which is used for automatic the testing carried out on web browser.

Continuous Monitoring.

Nagios is an open source devops tools which is used for monitoring system, network infrastructure. It also offers monitoring and alerting services for any configurable event.