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T12 - 43

SEPM - Experiment 1

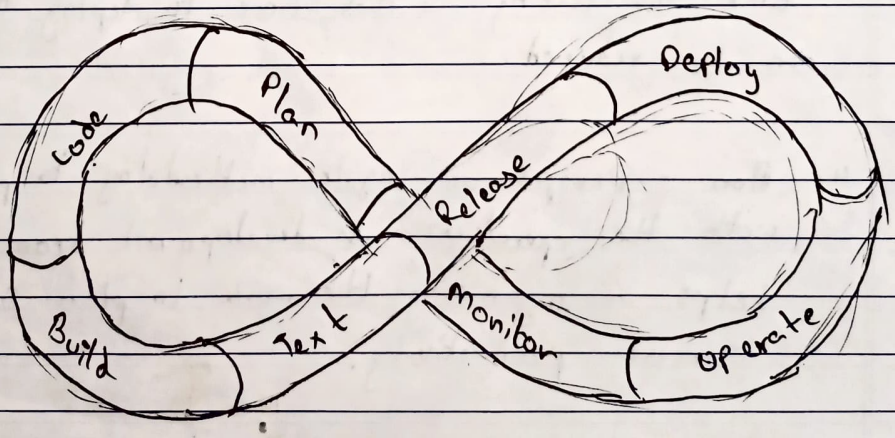
Aim: To understand Devops, principles, practices and Devops roles and responsibilies.

Theory:

Definition:

- Devops is the combination of two words, one is development and other is operations. It is a culture to promote the development and operation process collectively.
- Devops helps to increase organisation speed to deliver applications and services. It also allows organisations to serve their customers better & complete more strongly in market.
- Devops can also be defined as a sequence of development & IT operations with better communication and collaboration.
- Devops has become one of most valuable business disiplines for enterprises or organizations. With the help of Devops, quality & speed of application delivery has improved to a great extent.

Architecture :-



Devops Architecture

1. Build - Without devops, the cost of consumption of resources was evaluated based on pre-defined individual usage with fixed hardware allocation, and with devops, the usage with fixed of cloud, sharing of resources comes into the picture, & the build is dependent upon the user's need. which is a mechanism to control usage of resources or capacity.

2. Code - Many good practices such as git enables code to be used, which ensures writing code for business, helps to track changes, getting notified about reason behind differences in the actual and the expected output, & if necessary reverting to original code developed. The code can be appropriately arranged in file, , folders, etc. and they can be reused.

3. Test - The application will be ready for production after testing. In the case of manual testing, it consumes more time in testing & moving the code to the output. The testing can be ~~authorised~~ automated, which decreases the time for testing so that time to deploy the code to production can be reduced.

4. Plan - Devops use agile methodology to plan the development. with the operations & development team in sync, it helps in organizing the work to plan accordingly to increase productivity.

5. Monitor - Continuous monitoring is used to identify any risk of ~~fa~~ failure. Also it helps in tracking system accurately so that the health of application can be checked.

6. Deploy - many systems can support the scheduler for automated deployment. The cloud management platform enable uses to capture accurated insights and view the optimization scenario, analytics on trends by deployement of dashboards.

7. Operate - Devops changes the traditional approach of developing & tsting separately. The teams operate in a collaborative way where both team actively participate throughout service lifecycle. The operation team interacts with developers, & they come up with a monitoring plan which serves the IT & business requirements.

8. Release - Deployement to an enviroment can be done by automation. But when deployment is made to production enviroments, it is done by manual triggering. Many processes involved in release management. Commonly used to the deployement in production enviroment manually to lessen the impact of the customers.

Principles:

- Collaboration
- Data-based decision making.
- customer centric decision making.
- constant improvement.
- Responsibility throughout the lifecycle.
- Automation
- Failure as a learning opportunity.

Advantages :

- Devops is an excellent approach for quick development and deployment of applications.
- It responds faster to market changes to improve business growth.
- Devops escalate business profit by decreasing software delivery time & transportation costs.
- Devops clears descriptive process, which gives clarity on product development & delivery.

Disadvantages :-

- Devops professional experts developers are less available.
- Developing with Devops is so expensive.
- Adopting new Devops technology into the industries is hard to manage in a short time.
- Lack of devops knowledge can be a problem in continuous integration of automation projects.

Conclusion :-

Hence, we have known what DevOps is & it's advantages & disadvantages.