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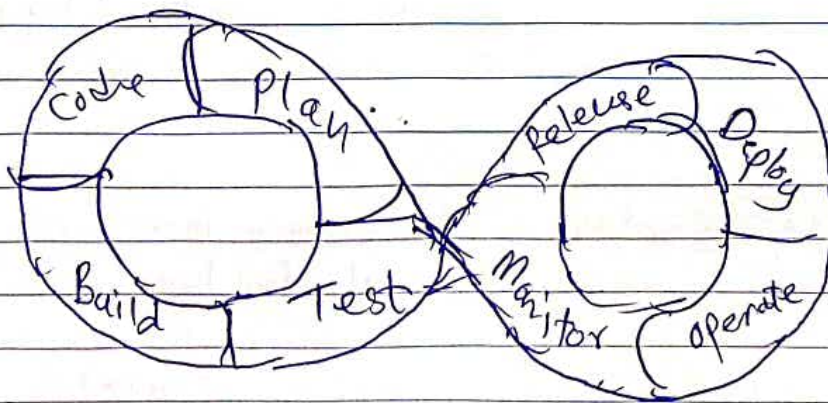
Exp 01

Aim:- To understand DevOps, principles, practices & DevOps roles & responsibilities

Theory:-

Definatⁿ

- DevOps is the combination of two words, one is Development & other is operations. Its culture to promote the development & operation process collectively.
- DevOps helps to "increase organisatⁿ" speed to deliver applications & services. It also allows organizaⁿ to serve their customers better & compete more strongly in the market.
- DevOps can also be defined as a sequence of development & IT operations with better communication & collaboration.



DevOps Architecture

1. Build - Without DevOps, the cost of the consumption of the resources was evaluated based on a pre-defined individual usage with fixed hardware allocation, which is a mechanism to control the usage of resources or capacity.

2. Code - Many good practices such as Git enables the code to be used, which ensures writing the code for business, helps. The code can be appropriately arranged in files & 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 times in testing & moving the code to the output. The testing can be automated, which decreases the time for testing. So deploy the code to production.

4. Plan - DevOps use agile methodology to plan the development. With the operation & development team in sync.

5. Monitor - Continuous learning monitoring is used to identify any risk of failure. Also it helps in tracking the system accurately so that the health of the application can be checked. The monitor becomes more comfortable with services where the log data can get monitored through many

third-party tools such as Splunk.

6. Deploy - DevOps system can support the scheduler for automated deployment. The cloud management platform enables user's to capture accurate insights & view the optimizⁿ scenario & analytics.

7. Operate - DevOps changes the tradition approach of developing & testing separately. The teams operate in a collaborative way where both the teams actively participate throughout the service lifecycle.

8. Release - Deployment to an environment can be done by automation. But when the deployment is made to the productⁿ environment, it's done by manual trigger. Many processes involved in release management commonly used to do the deployment in the production environment manually to lessen the impact on the customer.

Principles

- Collaboration
- Data-based Decision making
- Customer-centric Decision making
- Automation
- Constant improvement
- Failure as a learning opportunity.

Advantages

- DevOps is an excellent approach for quick development & deployment of applications.
- It responds faster to the market changes to improve business growth.
- DevOps changes the descriptive process, which gives clarity on production development & delivery.
- It improves customer experience & satisfaction.
- DevOps simplifies collaboration & places all tools in the cloud for customers to access.
- DevOps means collective responsibility, which leads to better team engagement & productivity.

Disadvantages

- Developing of this niche one 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 the continuous integration of certain projects.

Conclusion: Hence, we have known what DevOps is & its advantages & disadvantages.