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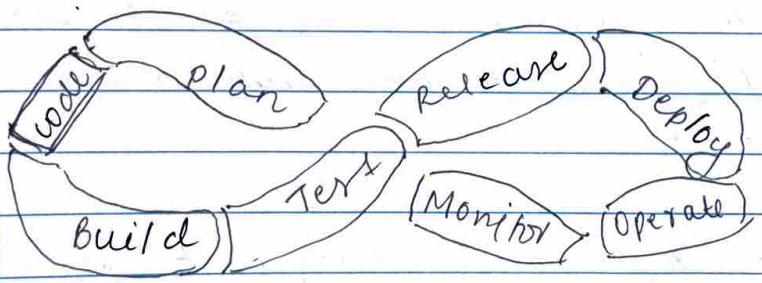
Experiment 1

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

Theory:

Definition:

- DevOps is the combination of 2 words, one is Development & the other is Operations. Its a culture to promote the development & operation process effectively.
- DevOps helps to increase organisation speed to deliver applications & services. It also allows organisations 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 has been one of the most valuable business disciplines for enterprises / organisations.



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

Code: Many good practices such as Git enables the code to be used, which ensures writing the code for business, helps to track changes, getting notified about the reason behind the difference in the actual and the expected output, and if necessary reverting to the original code developed

Test: The application will be ready for production after testing. In the case of manual testing, it consumes more time in testing and moving the code to the output. The testing can be automated, which decreases the time for testing so that the time to deploy the code to production can be reduced as automating the running of the scripts will remove many manual steps.

Plan: DevOps use Agile methodology to plan the development. With the operations & the development team in sync, it helps in organising the work to plan accordingly to increase productivity.

5. Monitor : Continuous monitoring is used to identify any risk & failure. Also, it helps in tracking the system accurately so that the health of the application can be checked. The monitoring becomes more comfortable with services where the log data may get monitored through many 3rd party tools such as Splunk.

6. Deploy : Many systems can support the scheduler for automated deployment. The cloud management platform enables users to capture accurate insights & view the optimization scenario, analytics on trends by the deployment of dashboards.

7. Operate : DevOps changes the traditional 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 production environment, it is done by manual triggering.

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 & deployment of applications.
- It responds faster to the market changes to improve business growth
- DevOps escalate business profit by decreasing software delivery time & transportation costs.
- DevOps clears the descriptive process, which gives clarity on product development & delivery.
- It improves customer experience & satisfaction.

Disadvantages:

- DevOps professional/experts developers are less available
- Developing with DevOps is so expensive.
- Adopting new DevOps tech into the industries is hard to manage in a short time.

Conclusion: Hence, we have known what DevOps is & its adv & disadv.