Name - Rohan G. Fukat
T23 - 2311129
SEPM

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Experiment No. 1

Aim : To understand DevOps, principles, practices and DevOps roles and responsibilities

Theory :

Definition -

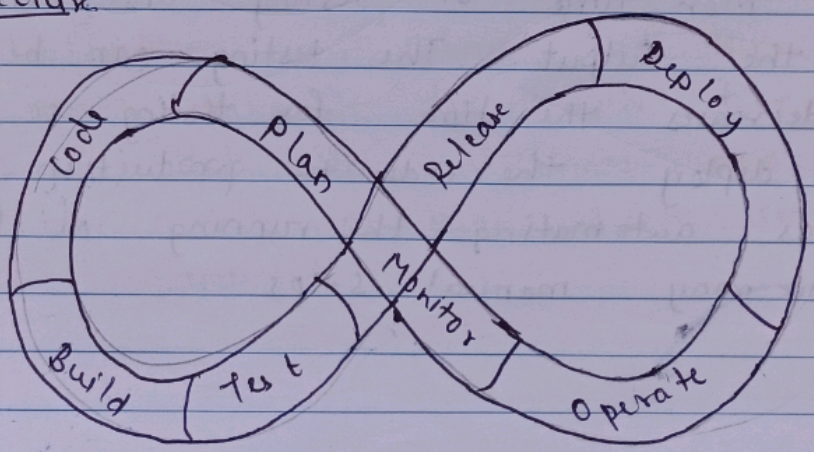
1) DevOps is the combination two words i-e Developme and Operations. It is a culture to promote the development and Operation process collaboratively.

2) Helps to increase organization speed to deliver applications and services. It also allows organisations to serve their customers better and compete more strongly in the market.

3) Defined as sequence of development and IT operations with better collaboration and communications.

4) It is one of the most valuable business, disciplines for enterprise or organisations. With the help of DevOps, quality and speed of the application delivery has improved to a great extent.

Architecture



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1) Build - Without DevOps, the cost of the consumption of the 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, and the build is dependent upon the user's need 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 to track changes, getting notified about the reason behind the difference in the actual and expected o/p and if necessary reverting to the original code developed. The code can be appropriately arranged in files, folders etc. And they can be reused.

3) Test - 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

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4) Plan - DevOps use Agile Methodology to plan the development. With the operations and 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 of 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 third-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 and view the optimization scenario, analytics on trends by the deployment of dashboards.

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

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. Many processes involved in release management.

Adv :

1) Excellent approach for quick development and deployment of applications
2) Responds faster to the market changes to improve business growth
3) Escalate business profit by decreasing software delivery time and transportation costs.
4) DevOps clears the descriptive procss, which gives clarity on product development and delivery.
5) Improves customer experience and satisfaction
6) ~~Imp~~ Simplifies collaboration and places all tools in the cloud for customer to access.
7) DevOps means collectively responsibility, which leads to better team engagement and productivity.

Dis Adv :

1) DevOps professional or experts are less available.
2) Developing with DevOps is so expensive
3) Adapting New technology into industries is hard to mange in a short time.
4) Lack of DevOps can be problem in integration of automation projects

Conclusion : We have known DevOps, its adv and its disadv.