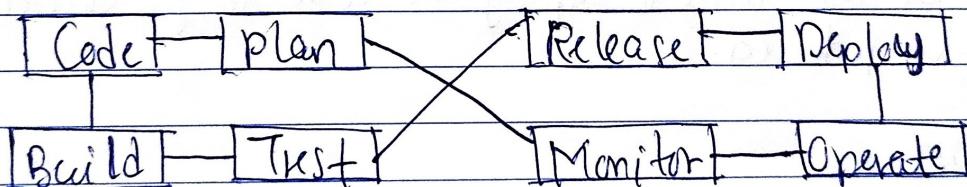


SEPM
Experiment - 01

Aim: To understand DevOps, principles, practices and DevOps roles & Responsibilities.

Theory:

- Definition: • DevOps is the combination of two words, one is Development and other is Operations. It is a culture to promote the development & operation process collectively
- DevOps helps to increase organisation speed to deliver applications & services. It also allows organization 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 and collaboration

Architecture:

DevOps Architecture

1) Build

Without DevOps, the cost of the consumption of the resources was evaluated based on the predefined individual usage with fixed hardware allocation

And with DevOps, the usage of cloud, sharing the resources comes into the picture, and the build is independent upon 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 code output, and if necessary reverting to the original code developed.

3) 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 so that the time to deploy the code to production can be reduced.

4) Plan

DevOps uses Agile Methodology to plan the development with the operations and 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 or issue. 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手 by the development 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 throughout the service life cycle. The operation team interacts with developers.

8) Release

Deployment to an environment can be done by automation. But when the development is made to the production environment; it is done by manual triggering.

Many processes involved in release management commonly used to do the deployment in the production environment.

Principles

- 1) Collaboration
- 2) Data-Based Decision Making

- 3) Customer-Centric Decision Making
- 4) Constant Improvement
- 5) Responsibility Throughout the Lifecycle
- 6) Automation
- 7) Failure as a Learning Opportunity.

Advantages

- 1) DevOps is an excellent approach for quick development and deployment of applications
- 2) It responds faster to the market changes to improve business growth.
- 3) DevOps escalate business profit by decreasing software delivery time & costs
- 4) DevOps clear the descriptive process, which gives clarity on product development.
- 5) It improves customer experience & satisfaction

Disadvantages

- 1) DevOps professionals or experts developers are less available
- 2) Developing with DevOps is so expensive
- 3) Adopting new DevOps technology into the business industries is hard to manage in a short time.

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