KAPRANI
T12-45



EXPERIMENT NO. 1

Aim: to understand DevOps, principles & DevOps roles & responsibilities

Theory:

- Definition: DevOps is the combination of 2 words Development & 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 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 become one of the most valuable business disciplines for enterprises or organisations. With the help of DevOps, quality & speed of the application delivery

ARCHITECTURE:

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 & the build is dependant on the user's need, which is a mechanism to control usage
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 differ m the actual & the expected output, and if necessary reverting to the original code developed The code can be approximately arranged in files folders etc

3. Test - The application will be ready for production after testing & 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 scripts will remove many manual steps

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

5. Monitor: continuous monitoring is used to identify any risk of failure. Also it helps the tracking 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 third party tools such as Splunk

6. Deploy: Many systems can support the schedules for automated deployment. The cloud managemen platform enables users to capture accurate insights & view the optimisation scenario analytics on trends by deployment of dashboard

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 lifecycle The operation team interacts with developers & they come up

with a monitoring plan which serves the IT & 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

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 simplifies collaboration & places all tools in the cloud for customers to access
- DevOps means collective responsibility which leads to better team engagement & productivity

DisAdvantages
- DevOps professional or experts developers are less available
- Developing with DevOps is expensive
- Lack of DevOps knowledge can be a problem

Conclusion: Hence we know what DevOps is & its advantages & disadv