Assignment - 02

1) Why is DevOps a major requirement in today's Scenario?

Ans → In a nutshell the devOps model allows Companies to create viable application and programmer within a much shorter time frame, thus accelerating the speed of innovation.

It is a major requirement because it is a Software development and Operational approach that enables faster developments of new products & easy maintainance of Existing deployments.

Some important benifits of DevOps as a major requirma

* faster solution.
* Increased efficiency.
* Improved Customer experience
* faster ROI
* Improved performance
* Continous Improvement
* Reduce failures & roll back.

→ Greater stability of IT Software applications & moral unites them in Common objectives. of achieving business targets.

→ In this approach the Software is seen as a tool to improv Organizational efficiency and security automating several key proces.

2) Explain all DevOps tools in detail?

→ Since no single tool work across all areas of development & delivery. The need is to first unders the process and according by map the tool to be Successfully establish devOps Culture in Organiz

1) Jenkins : an excellent devOps automation tool being adopted by increased number of software development teams, It is essentially an open source CI/CD server that helps in automating the different stages of delivery pipeline

* Allows us to set up and customize CD pipeline as per individual needs.
* Runs on Linux, windows & MacOS.
* allows you to iterate & deploy new code with greater speed.

2) Git : widely used across software industries;
→ Git is an distributed scm (source code management) DevOps tool. It allows you to easily track the progress of your development work, where you can store different versions of source code and return to previous one in requirement.

* A free & open-source tool that supports most of the version control features of check-in merging, labels, commit, branches etc.
* Requires a hosted repository such as github or bit bucket that offers unlimited private repositories.
* Easy to learn & maintain with seperate branches of source-code that can be merged through git.

3) Nagios : One of the most popular free & open-source DevOps monitoring tool. it allows to monitor your infrastructure real time so that identifying security threats, detection of outages & error becomes easier.

*) facilitates two methods of server monitoring
→ agent based or agentless.

*) Allow for monitoring of windows, UNIX, Linux web apps as well.

*) free open source with various addon available

different versions of Nagios are;

i) Nagios core → command line tool
ii) Nagios XI → web based GUI
iii) Nagios fusion → for simultaneous multiple network monitoring
iv) Log server → searches log data with automatic alerts.

4) Docker: It is one of the widely used development tools of DevOps & is known to provide platform independent integrated container security & agile operations for cloud native & legacy applications.

* Easily automates app deployment & make distributed development easy.
* Docker containers support virtual machine.

→ environment are platform independent.

* Build-in-Support for docker available for both google cloud and AWS.

5) Kubernetes: ideal for large teams, this DevOps tool is built on what docker started in the field of containerization. It is a powerful tool that can group containers by logical categorisation.

* it can be deployed to multiple computers through automated distribution.
* Kubernetes is the first container Orchestration tool.
*) Extremely useful in the streaming computer projects across large teams.

6) Ansible : It is primarily a design management and organization DevOps tool, it is written in simple programming language YAML. It makes easier for DevOps teams to scale the process of Automation and speed up productivity.

* Based on master slave architecture
* It is an ideal DevOps tool to manage complex deployments & speed up the process of development

7) chef : This DevOps tool is mainly for checking the configurations & it's helpful in automating the infrastructure

* Assist is standardizing and enforcing the configurations continously.
* chef automates the whole process and make sure that the systems are correctly configured.
* chef helps you ensure that the configuration policies remain completely auditable, readable & testable.

8) puppet : It is an Open source configuration management tool that is used for deploying, configuring & managing servers.

* offers master-slave architecture
* puppet works smoothly for hybrid infrastructure & applications.
* compatible with Linux, windows & UNIX OS.

9) splunk : it is designed to make machine data usable as well as accessible to everyone by delivering operational intelligence to DevOps teams.

* it is an excellent choice of tool that make companies more secure, productive & competitive.

* Splunk delivers a more Central & Collective view of IT Services.
* Easily detects patterns, highlights, anomalies and areas of impact.

10 Gradle: An Extremely Versatile DevOps tool, Gradle allows you to write your code in various languages including C++, java, python,
It is supported by various IDE's such as net beans, Eclipse & IntelliJ IDEA.

* The Core model of gradle is based on tasks - actions, inputs & outputs.
* The incremental builds of Grade allow you to save a substancial amount of compile time.