Devops Assignment no: 02

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Q:1 Why is Devops a major requirement in todays Scenario?

Ans: In a nut-shell the Devops model allows Companies to create Usable application and programes within a much short time frame, thus accelerating the speed of innovation. It is a major requirement because it's a software development and operational approach that enables faster developments of new Products & easy maintainance of existing deployments.

- Some Imporvtent benefits of devops are a Major requirement,
  1. faster solution
  2. increased effeciency
  3. faster ROI
  4. Improved performance.

- Greater stability of IT software applications as it brings various departments such as IT product Engineering, Cyber security, Operations & More.

- In this approach the software is seen as a tool to improve organizational efficiency and security by automating several key processes.

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Q.2 Explain all devops tools in Details.

Ans:

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.

(1) Allows us to set up and customise CD-pipeline as per individual needs

(2) Runs on Linux, window & mac os

(3) allow you to iterate & deploy new code with greater speed.

② Git: widely used across software industries Git is an distributed SCM Devops tool it allows you to easily tracks the Progress of your development work, where you can save different versions of source-code and return to Previous one or when required.

* A free & open source tool that supports most of the version control features of check-in, merging, labels.
* Requires a hosted repository such as github or bitbucket that offers unlimited Private repositories.
* Easy to learn & maintain.

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(3) Nagios :- one of the most popular free and open-source DevOps Monitoring tool ; Nagios allows you to monitor your infrastructure real time so that identifying security threats, detection of stages & error becomes easier.
① facilities two methods of server Monitoring → agent based or agentless
② allow for Monitoring of Window, Unix, Linux & Web apps as well
③ free open source with various adds on available

(4) Docker :- It is one of the widely used development tool of DevOps & is known to provide platform independent integrated containers security & agile operations for cloud-native & legacy applications.
① Easily automates app deployment & make distributed distributed development easy.
② Docker Container support virtual Machine.

(5) Kubernetes : ideal for Larger teams ; this DevOps tool is built on what on what docker started in the field of containerization. It is a powerful tool that, Controls group Containers by logical categorisation.

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by logical Categorisation.
- it can be deployed to multiple Computers through automated distribution.
- Kubernetes is the first Container orchestration tool.
- Extremely useful in the streamlining Complex 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 & speed up Productivity.
- Based on master, slave Architecture.

(7) Chef :- This Devops tool is mainly used for checking the configurations & its help helpful in automating the infrastructure.
- Assist in standardizing and enforcing the configurations continously.
- chef automates the whole process and make sure that the systems are correctly configured.

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(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 infra. & applications.

(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 service.

(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 Gradle allow you to save a substantial amount of Compile time.