Quiz score = 7/10 | Assignment No. 1 | Name:- Jyoti S. Nachankar
BE IT / 33

Subject :- DevOps Lab

Q.1) What is Jenkins? How does the Jenkins helps for faster software development?

→ Jenkin is an open source automation tool written in Java with plugins built for continuous Integration purpose. Jenkins is used to build and test your software projects continuously making it easier for developers to integrate changes to project and making it easier for users to obtain a fresh build. It also allows you to continuously deliver your software by integrating with a large no. of testing and ~~develop~~ deployment technology.

process of Jenkins :-

① First, a developer commits the code to the source code repository. Meanwhile, the Jenkins server checks the repository at regular intervals for changes.

② Soon after a commit occurs, the Jenkins server detects the changes that have occured in the source code repository. Jenkins will pull those changes & will start preparing new build.

③ If the build fails, then the concerned team will be notified.

④ If the build is successful then Jenkins deploys the build in the test server.

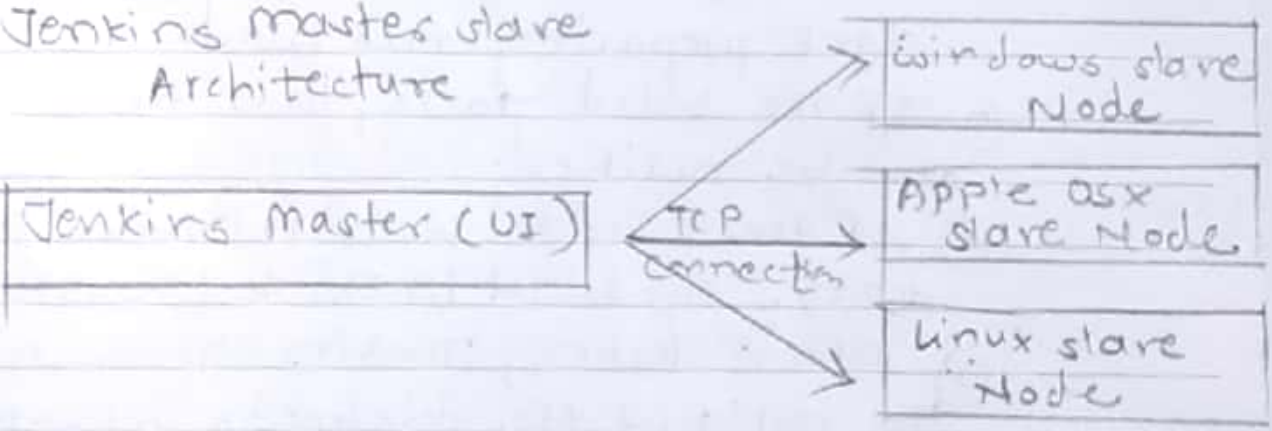
⑤ After testing, Jenkins generates feedback & the notifies the developers about the build & test results.

⑥ It will continue to check the source code repository for changes made in the source code & the whole process keeps on repeating. Jenkins helps for faster software Development stand is following:-

Standalone Jenkins instances can be an intensive disk & CPU resource-eating process. To avoid this, we can scale it by implementing slave clones which essentially would help us offload apart of the master node's responsibilities. A slave is just a device that is configured to act as executor on behalf of the master. The master is the base installation of the Jenkins tool & does the basic operations & serves the user interface while the slaves do the actual work.

In following diagram, the Jenkins master is in charge of the UI & the slave nodes are of different as Types.

Jenkins master slave Architecture



Q. 2) List the Devops open source tools along with their benefits.

→ Following are the Devops tools which can be used in different phases of the Software development cycle:

1) Jenkins :-

An excellent Devops automation tool being adopted by an increasing no. of s/w development teams, Jenkins is essential an open source CI / CD server that helps in automating the different stages of the delivery pipline.

Benefits of Jenkins :-

1) It allows you to set up & customize CD pipline as per individual needs.
2) Runs on windows, linux & mac osx, which makes it easy to get started with.
3) Jenking allows you to integrate & deploy new code with greater speed.

2) Git :-

Widely used across s/w industries, Git is a distributed scm (Source Code Management) Devops tool. It allows you to easily track the progress of your development work.

Benefits of Git :-

1) It is free & open source tool that supports most of the version control features of checking, merging, labels, commits, branches etc.

2) Requires a hosted repository such as Github or Bit bucket that offers unlimited private repository for free.
3) Easy to learn & maintain with separate branches of source code that can be merged through Git.

3) Nagios :-
Nagios allows you to monitor your infrastructure in real-time so that identifying security breaches, detection of outages & errors become easier.
Nagios feeds out reports & graphs allowing for real time infrastructure monitoring.

Benefits of Nagios :-
1) Free & open source with various addons available.
2) Facilitates 2 methods for servers monitoring - agent based & agentless.
3) Allows for monitoring of windows, UNIX, Linux, web application as well.

4) Splunk :-
Splunk is designed to make machine data usable as well as accessible to everyone by delivering operation al intelligence to DevOps teams.

Benefits of spunk :-
1) offers actionable insights with data driv

analytics on machine generated data.
2) splunk delivers a more central & Collective view of IT services.

5) Docker :-
Docker is one of the most widely used development tool of DevOps & is known to provide platform independent integrated Container security.

Benefits of Docker :-
1) Easily automates app deployment & makes distributed development easy.
2) Built-in support for Docker available by both Google Cloud & Aws.

6) Puppet :-
It is an open source configuration management tool that is used for deploying, configuring & managing servers.

Benefits of Puppet :-
1) It offers master slave architecture.
2) It compactible with windows, Linux, UNIX operating system.

7) Ansible :-
Ansible is primarily an agentless design management & organization Devops tool. It is written in YAML.

Benefits of Ansible :-
Based on the master slave architecture.

Q.3) What is the Docker technology & what are it's Benefits?

→ Docker is a tool designed to make it easier to create, deploy & run applications by using Containers. Containers allows a developer to package up an application with all the parts it needs, such as libraries & other dependencies. & deploy it as one package. By doing so, thanks to the Container the developer can rest assured that the application will run on any other Linux machine regardless of any customized settings that machine might have that could differ from the machine used for writing & testing the code.

Benefits of Docker are following:

1) Return on investment & cost savings.
2) standardization & productivity.
3) CI Efficiency
4) compactability & maintainability.
5) Simplicity & fast configurations.
6) Rapid Deployment
7) continuous Deployment & Testing
8) multi cloud platforms.
9) Isolation
10) Security
11)