**What is devops?**

By the name devops we clear that devops is the collaboration of development as well as operations, devops is not a tool or software or not any framework, devops is combinations of tools which is helps in automation of the whole infrastructure, devops basically and implementing agile methodology on devopment side as well as operation side.

**What are the advatages of devops?**

Technical:

Continuous software delivery

less complex probles to fix

increasing deployment frequency

business:

lower failure rates of new releases

faster delivery features

more stable operating environments

**What are the prerequisites to became devops engineer?**

Experience with infrastructure automation tools like chef, ansible, puppet or windows powershell, fluency in web languages like ruby, python, php or java, interpersonal skills that helps to communicate with team and roles

**Difference btw Agile and devops?**

Agile: Agility in development only, involves and practices only in agile scrum, agile kandan, Timeliness is main priority, feedback from customers only, smaller release cycles.

Devops: Agility in both development and operations, involves process CI-CD etc, Timeliness and quality have equal priority, feedback from self(monitoring tools),smaller releases cycles with immediate feedback, agility and need for automation.

**What are the top tools in devops? which tool have you worked on it?**

version contrling tool-git

continuous integration tool- jenkins

continuous testing tool- selenium

configuration management & deployment tool - puppet,chef,ansible

continuous monitoring tool -nagios

containarization tool -Docker

**What are the principles behind devops?**

Infrastructure as code

Continuous deployment

Automation

Monitoring

Security

**What are the kpi's (key performance indicators) in devops?**

Mean time to failure recovery

Deployment frequency

Percentages of failed deployments

**What is infrastructure as code?**

Infrastructure as code is the process of managing and provisioning computer data centers through machine-readable definition files, rather than physical hardware configuration or interactive configuration tools.

**What is git?**

Git is distributed version controlling system and source code management (scm) with an emphasis to handle small and large projects with speed and efficiency.

**What is repository in git?**

Repository contains a directory named .git, where git keeps all the metadata into the repositories, the content of .git directory are private to git

**What is the difference between Git and SVN?**

Git is distributed version controlling system, svn is revision control and software versioning system content in git stored as metadata, svn stores files of content git have centralized servers and repositories, svn doesn't have centralized servers and repositories git is less preferred for handling extremely large files and frequently changing binary files, svn can handle multiple projects stored in same repository. git doesn't support commits across multiple branches and tags, subversion(svn)allows the creation of folders in any location in repository layout

**What is the advantages of Git?**

Data redundancy and replication, High available, only one .git directory per repository any sort of projects use in git

**What is the role in git?**

Git is the distributed version controlling system and it is very efficient source code manager, by using git we can download the code from remote repository where the developers upload the code into the github, it controls the versioning of the code and it having all versions of the code in repositories like directories,

**Git Rebase?**

Git rebase is the feature in git, it is used for performing fast forward merge, means commits coming from any branch will be projected on the top most sections of master branch, head will point to the top most commit which comes from the branch.

**Git webhooks ?**

Webhooks allow you to build or setup integrations, such as Github or OAuth Apps, which subscribe to certain events on Github.com, when one of those events is triggered, we will send the HTTP POST playload to the webhooks configured URL, Webhooks can be used to update an external issue tracker, trigger CI builds, update a backup mirror, even deploy to your production server.

Webhooks can be installed on an organization or specific repository, Once installed, the webhook will be triggered each time one or more subscribed events occurs.

**What is function of git push in git?**

Git push command updates remote repository along with associated objects.

**What is stagging area or index in git?**

Before completing the commits,it can be formated and reviewed in an intermediate area called stagging area or index.

**What is Git stash?**

Git stash takes the current state of working directory and puts the files into the stack for later use and provides the clean working directory back, in case if you are in the middle of the some work and you need to jump over other job, without loosing the current work so you can send the current work or files in git stash.

**What is Git stash drop or pop?**

git stash drop or pop command use to remove the latest stashed item from the list by default,it can also remove the specific argument

**Pom.xml file?**

A project object model or POM is the fundamental unit of work in Maven, It is an XML file that contains information about the project and configuration details used by maven to build the project, It contains default values for most projects,

Ex: build directory which is target

Source directory which is src/main/java

Test source directory src/test/java , etc

When executing task or goal, maven looks for the POM in the current directory, It reads the POM, get the needed configuration information, then executes the goal,

Project version, description, developers and mailing lists and such can be specified

**Maven life cycle?**

1. prepare\_resources-

In this stage the component that are necessary for maven project are created, this is default stage of maven and it is executed automatically

2. validate-

In this stage maven will check whether the maven projects is created correctly according to the filter id that was choosen

3.compile-

When java programers create a projects the default extenstion of these files will be .java, here these .java files compile and it will create .class files,these .class fiels also known widecode files

4.Test-

The unit test programs that created by the developers will be compile in this stage

5package-

In this stage jenkins will create artifacts which can come in the format

of jar war/ear etc

6.install-

The artifact created by our develers can be installed into the maven local repository

7.deploy-

Here the artifact will be deployed into applications server like tomcat,jboss etc

**What are dependencies in maven?**

**Explain how can create a backup and copy files in Jenkins?**

To create backup, all you need to do is to periodically back up your JENKINS\_HOME directory. This contains all your job configuration and slave configuration and your build history, To create the backup of the jenkins setup just copy this directory, you can also copy the job directory to clone or replicate a job or rename the directory.

**What is Jenkins?**

Jenkins is open source continuous Integration and continuous Delivery tool

**What is the programming language used to build Jenkins?**

Jenkins is the open source automation server written in Java.

**Explain how you can move or copy Jenkins from one server to another?**

I will approach this task by copying the jobs directory from the older server to new one, by multiple ways to do that,

Move the job from one server which is jenkins installed to another by simply copy the corresponding job directory,

Make copy of an existing job by making clone of job directory by a different name,

Rename the existing job directory.

**Explain the how can you setup the jenkins job?**

My approach for this is 1st go to the jenkins dashboard,1st option is there to create new item for creating new job, select the which type of project is this, free style or pipeline, then configure the scm details in job configure option in source code management, then give the triggers to build the job like build job plugins like maven or ant then deploy the job using above configurations then create another test job for testing the deployed job, configure the scm and deploy artifact details in configurations options.

**Mention some of the useful plugins in Jenkins?**

Maven 2 project, Amazon EC2,HTMl publisher, copy artifact, deploy to container, build pipeline

**What are the features of Jenkins?**

Free open source, Easy installation on various operating systems, build pipeline support workflow plugins, easy upgrade, rapid release cycles, easy configuration setup

**What are the advantages of Jenkins? Why we use Jenkins?**

Jenkins is used to continuously monitor the large code base in real time,

It enables developers to find bugs in their code and fix,

Email notifications made to developers regarding their check-ins as post build action.

**Advantages of jenkins:**

Build failures are cached during the integration stage

Notifies the developers about build report status using LDAP mail

Maven released project is automated with simple steps

Easy bug tracking

Automatic changes get updated in the build report with notifications

**What are the pre-requisites for using Jenkins?**

A source code repositories which is accessible for instances is git repository

Working build scripts ex is maven script, checked into the repository

**Mention what are the commands you can use to start Jenkins manually?**

To start the jenkins manually open console/command line, then go to jenkins installation directory then use below commands

To start the jenkins:jenkins.exe start

To stop the jenkins:jenkins.exe stop

To restart the jenkins:jenkins.exe restart

**How will you secure Jenkins?**

Ensure global security is on

Automate the process of setting rights/privileges in jenkins with custom version control script

Limited physical access to jenkins data/folders

**What is the relation between Hudson and Jenkins?**

Hudson is the earlier name of jenkins, After some issues the project name was changed from hudson to jenkins.

**What are the various ways in which build can be scheduled in Jenkins?**

We can schedule a build in jenkins by following ways

By source code management commits

After completion of other builds

Can be scheduled to run at the specified time

Manual build request

**Which SCM tools Jenkins supports?**

Git, Subversion, CVS, Clearcase,

**What are the two components Jenkins is mainly integrated with?**

According to my knowledge version control system like git, SVN

Build management tools like Apache maven

**What is Continuous Integration in Jenkins?**

**Which Command is used to start Jenkins?**

Connect the jenkins server then open the command prompt browse the directory where jenkins.war resides, run the command given below

java -jar jenkins.war

**What is Jenkinsfile?**

The text file where all the definitions of pipelines are defined is called jenkinsfile, It is being checked in the source control repository

**What are Scripted Pipelines in Jenkins?**

Scripted pipeline allows the Groovy Syntax as given below

node

{

steps

{

}

}

node is the part of the Jenkins distributed mode architecture where 2 types of node master which handle all the tasks in the development environment and the agent is being used to handle multiple tasks individually.

**Which CI Tools are used in Jenkins?**

Jenkins, gitlab CI, circle CI, Codeship

**What are Triggers?**

Triggers in jenkins defines in the way which the pipeline should be executed frequently, Poll SCM, Cron etc are the currently available triggers.

**How to make sure that your project build does not break in Jenkins?**

We need to follow the below steps for build does not break in jenkins

Clean and successful installation of jenkins in our local machine with all unit tests, All Code changes are reflected successfully

Checking for repository synchronization to make secure that all the differences and changes related to configuration and other settings are given in the repository

**How will you define Post in Jenkins?**

Post is the section that contains several additional steps which might execute after completion of pipeline, Execution of all the steps within the condition block which is changed successful, always failure unstable and aborted, depends upon the completion status of the pipeline

**What are the parameters of jenkins?**

Parameter are supported by Agent section are used to support various use-cases pipeline, it is defined at the top level of pipeline or inside an individual stage directive

**How can You Clone a Git Repository via Jenkins?**

To create clone repository via jenkins you need to use your git credentials in the jenkins systems

To archive the same you need to enter the jenkins job directory and execute the git config command

**What is the use of Backup Plugin in Jenkins? How to use it?**

Jenkins backup plugin is used to backup the critical configurations and setting in order to use them in the future in case of any failure or as per the need of time.

**What is Flow Control in Jenkins?**

Flow control follow the pipeline structure(scripted pipeline)that are being executed from top to buttom of the jenkins file

**What are the basic requirements for installing Jenkins?**

Java 7 or above, Server 3.1,Ram ranging for 200MB to 70+GB depending the project build needs,2MB or more of memory

**Why Jenkins is called a Continuous Delivery Tool?**

**Master slave configuration?**

when we want to run all the jenkins jobs in same time so it can affect the performance of the job, since all are triggers in same server, so avoid these type of problems we use master slave setup, slave machines are additional servers which takes load from master servers

**Steps for configuration:** Launch the server as slave then create password, make password authentication as yes, then connect to master server copy the public keys in slave server, then download the slave.jar file in slave machine from master serverthen give executable permissions to slave.jar file create workspace in slave machine, then in jenkins create new node as slave then configure remote root directory by enter the private ip of the slave and jenkins running command**,** then identify the job which will do integration in slave server, then check the restrict to the other projects, make connection from slave server.

**Jenkins Port No?**

Jenkins port number 8080

**How to install Jenkins server?**

Connect the ubuntu server and login the server, update the apt repository by using apt-get update command, then install the java 8 because it is the prerequisite for Jenkins, apt-get install openjdk-8-jdk and also install git and maven then download the Jenkins.war file by using wget command, then start the Jenkins by using java –jar Jenkins.war, then launch any browser copy the public ip of the Jenkins server and port number of the Jenkins (8080),then login into the Jenkins dashboard.

**CI-CD?**

CI- continuous integration means continuous download the code, continuous deploy the code nothing but creating artifact then continuous testing the file which is get after deploy when testing is passed it will send for delivery to the client in case testing fails due to any errors again the continuous integration process will required.

**How will do multiple jobs In Jenkins?**

For creating jobs in Jenkins dashboard it have option to new item, select the new item option and give name for job then select the project type i.e free style project, like this.

For run the multiple jobs , we have 2 jobs run one after the other, then go into the configuration section then go into the post build action select the other project give the job name whatever need to run the other job.

**In Jenkins how to implement load balancer ?**

**How to implement Jenkins in docker?**

**What is Docker?**

Docker is the containerization technology that packages your application and all its dependencies in the form of containers to ensure that your application works in any environment.

**What is Docker image?**

Docker image is collection of binaries and libraries which are necessary for one software application to run, it contains basic configuration file that the required for that application.

we can create the docker image with build command,it creates container that starts when it begins to

run,all the docker images stored in the docker registry like public docker registry,

**What is docker containers?**

Docker container is running instance of image, any number of containers can be created through one docker image.

docker containers includes the applications and all of its dependencies,but share the kernals with

other containers running in user space on host operating system/run in computer/any infrastructure

and in cloud,it is runtime instances of docker images

**What is docker hub?**

docker hub is cloud based registry service which allows you to link to code repositories,build images

and test them,stores manually pushed images,link to docker cloud so you can deploy images to your hosts,

**What is docker swarm?**

This is the product of docker for implementing container orchestration means is process of run the docker container in distributed env and all these communicate with each other,scale togather

**What is Dockerfile used for?**

Docker can build the images automatically by reading the instructions from a docker file,

it is the test document contains all the commands,user cloud call on commandline to assemble

on image

**How to create Docker container**?

we can use docker images for creatin the docker containers using

docker run --name -t -i command\_name, this command will create and start the container

**What are the various states that a Docker container can be in at any given point in time?**

Running,pausing,Restarting and Exited

**Is there a way to identify the status of a Docker container?**

docker ps -a

**What are the most common instructions in Dockerfile?**

FROM – It is used to specify the base image from which docker file has to be created

RUN – This command is used to execute the linux commands within the container, useful for upgrading the repository

CMD-provide default value of an executing container like start, stop the containers

**Explain basic Docker usage workflow?**

Starts with dockerfile,using this file we create docker image,by using image we can create container

and start container,running container is similar to virtual machine.

**Command use to work on docker debug mode?**

$ docker -d –D

Start the docker daemon with the debug option –D in docker configuration file to start in debug mode.

**For creating layers?**

FROM,COPY,RUN,CMD

**What is the process for stopping and restarting a Docker container?**

docker stop container\_name/id

docker restart container\_name/id

**What are the different functionalities and applications of using Docker?**

**What is the lifecycle of Docker Container?**

create,run,pause,unpause,start,stop,restart,kill and distroy container

**What is Hypervisor?**

Hypervisor handles creating virtual environment on which the guest virtual machines operate, hypervisor sits in between the physical machine and virtual machine provides virtualization service to virtual machine

**What Is Ansible?**

Ansible is the configuration management system, it is used to setup and manage the infrastructure and applications, it allows the users to update and deploy the applications using ssh without installing agent on remote server.

**What is the way to access shell environment variables in Ansible?**

if you want to access existing variables, user needs to use 'env lookup plugin'

ex: to access the value of office env on management system

**What Is the Best Method to Make Content Reusable/redistributable?**

You can read everything in roles in playbooks documentation section, it also sharable to other ansible users

**What is Ansible Tower?**

it is tool which maks ansible very easy,it acts like hub for task automation,

tower is free per use 10 nodes

**Explain how you can copy file recursively onto a target host?**

Copy module is the recursive parameter,for more efficient and large files synchronize module.