

# JENKINS

## 1. What is JENKINS?

- Continuous Integration and Deployment tool. it is used to schedule and automated builds, deployments etc. It is used for by developers and testers.
- 3 components of Jenkins
  - 1. Code change → Devs makes changes to the application code
  - 2. Test → CI tool automatically picks up the changes and tests the application
  - 3. Deploy → CI tool deploys the application with changes

## 2. What is Jenkins job?

- Everything is done by creating a job
- A task that Jenkins performs based on its schedule
- Made of several steps
- Can have a trigger that determines when it runs
- Reports the results of the run automatically

## 3. What is continuous Integration?

- CI is a development practice that requires developers to integrate code into a shared repository several times a day.
- Every time the software's code is changed, it is built and tested automatically

## 4. What is continuous deployment?

- Code changes are automatically built, tested, deployed, and prepared for a release to production
- Each check-in is then verified by an automated build, allowing teams to detect problems early.

## 5. Do you maintain Jenkins?

- It is done by Special Team -DevOps Team- , environment team, architecture team
- But I provide them information of my tests and configuration info and also the emails to send notifications.
  - Git path
  - Mvn code ; goals - compile, or verify -drunner=xml, etc.
  - Time schedule for certain tests

## 6. Who sets up Jenkins?

- In my company we have DevOps/Operations Support team who is responsible for maintaining jenkins.
- Those installed and configured jenkins. for deployments etc. They work with developers to create jobs for building and deploying the applications.
- For creating smoke tests, they work with automation engineers.

## 7. Who sets up Smoke Tests in Jenkins?

- As an automation engineer, I work with the devops/operations supports to create my smoke tests.
- For running my tests, I need certain plugins installed on Jenkins, I also need java, maven configured on jenkins, I also need browsers installed on the server where the tests will run.
- In my project, only devops/operations support team members have right to do the configurations above. that is why I have to work with them.
- Once the configuration of the Jenkins is completed, I can create and run the smoke test job.

## 8. How your smoke tests are configured on Jenkins?

- Our Jenkins job is configured to get my automated tests from GitHub and run every day using Maven.
- In configuration, first I created a new job and gave name "**smoke tests**".
- Then I selected option git in the Source Code Management section and entered the path to my framework on GitHub. And, also entered the git credentials.
- Next configuration is about build triggers where I chose option Build periodically and enter the time how often I want to run my tests.
- In the Build section, I choose option invoke top level maven command since my automation framework is created using maven.
- In the section I enter the maven command (without the mvn part).
- So, its normal command to run my test using terminal is '**mvn test**', in Jenkins I only enter '**test**'.
- Here I also enter the tag I want to run using command line.

```
test -Dcucumber.options="--tags @smoke"
```

- if I want to run regression tests, command is:

```
test -Dcucumber.options="--tags @regression"
```

- In the Post-build Actions, I do couple configuration,
  1. I add Cucumber reports option. This is available because we have installed cucumber html reports plugin to our Jenkins. Cucumber reports plugin will generate html report for every build. Every time we run smoke tests on Jenkins, we get a new report. and all reports for all build are saved.
  2. I add email option as the next Post-build Actions. Here I configure it so that everyone in my agile team is notified about the test results.

## 9. If you run your regression test on Jenkins, how do you execute it if it automatically runs?

## 10. What goes in the regression test?

- Depends on the team, test plan, scope, and business value

## 11. How many jobs in Jenkins?      What tests you have on Jenkins?      How Jenkins is used in your company for testing?

- I personally set up 2-3 jobs for automated tests
  - 1 for smoke → Smoke is running daily 2,3 times a day, making sure that all environments are up and running
  - Full regression (running manual and automated tests)?
    - Before each production release(after 3 sprints)
    - Only very stable test cases are stored in full regression
    - Updating functionality
  - Minor regression
    - Runs at the end of sprint
    - Tests that are related to certain modules and functionalities
    - I use tags to specify which module to run

## 12. What kind of tests can be done in Jenkins?

- Jenkins can run any automated test.
- For example, we can have
  - unit tests,
  - smoke tests,
  - integration tests,
  - regression tests,
  - sanity

### 13. What layers of tests can be tested using Jenkins?

- Testing different layers of the application is done with our test code.
- Jenkins does not care if we are testing UI or database or API. It only kicks off the tests and sends reports.
- So, if my automated test is a UI test, it means Jenkins is running UI tests. Or if it is an API test, Jenkins is running API tests.

### 14. How is code deployed to your environment?

- Devs write the code, test it then it is deployed in Jenkins from dev to test environment
- **What if it doesn't?**
  - Talk to your developer and ask them to deploy it

### 15. How do you search by tags?

- You can use **ctrl+H** to open search tool in Eclipse and put the tag name in there and

### 16. How to schedule a build in Jenkins?

- In Jenkins, under the job configuration we can define various build triggers.
- Simply find the 'Build Triggers' section and check the 'Build Periodically' checkbox.
- With the periodically build you can schedule the build definition by the date or day of the week and the time to execute the build.
- The format of the 'Schedule' textbox is as follows:
  - MINUTE (0-59), HOUR (0-23), DAY (1-31), MONTH (1-12), DAY OF THE WEEK (0-7)
- How do you do scheduling in Jenkins? How will you schedule test to be executed every 3 hours?
  - `H 3***` If you want to schedule your build every day at 7h00, this will do the job: `0 7 * * *`

### 17. What is build pipeline in Jenkins?

- Job chaining in Jenkins is the process of automatically starting other job(s) after the execution of a job.
- This approach lets you build multi-step build pipelines or trigger the rebuild of a project if one of its dependencies is updated.

### 18. How do you maintain your smoke tests job on Jenkins?

- I have configured the job to get the code from git, run the tests by passing a mvn command, generate reports and send email. I do not go and change the job configuration. Once set up, it always works.

### 19. JENKINS CUCUMBER REPORT

- Jenkins has Cucumber report plugin that can generate User Friendly report
- Only data Cucumber report plugin needs is JSON format report
- Once Cucumber report is generated, send the URL of the report to anyone who asks for the report
- All the history of automation tests are stored in Jenkins. It shows dates and hours and other details.
- If you need to see the automation report from past you find it in Jenkins.

### 20. Scheduling the Jenkins Job

- CRON Job → Scheduled automated task
  - That is the reason why Jenkins users use CRON time format.