SonarQube: -

Code Quality Checks:

Below areas are more than the level mean our code is not good for production, and not to ready for deployment.

* Bugs 🡪 error of the code
* Vulnerability 🡪 security issue on our code
* Code smell 🡪 code poorly written

Versions: Community version 🡪 limit of lines, developer version 🡪 no limit of lines to check.

Install:

Long time 🡪 install with DB

Test purpose 🡪 use docker image and launch container.

1. docker run -d –name sonar -p 9000:9000 sonarqube:lts-community

then hit localhost:9000 🡪 to check the SonarQube server status.

Username: admin (default username)

Password: admin (default password) 🡪 then reset the password.

SonarQube 🡪 need to find a language of our code, we have option called quality profiles. In this profiles we have seen lot of rules.

Click settings 🡪 click copy 🡪 change the name 🡪 we have to activate the rule or inactivate rule

We have quality gates 🡪 here we have certain conditions.

Jenkins 🡪 manage plugins 🡪 SonarQube scanner, Eclipse terrium, Maven

Jenkins 🡪 manage Jenkins 🡪 tools 🡪 configure jdk and SonarQube scanner and maven.

JaCoCo 🡪 third party tool integrate code coverage in maven.

Then create a sample pipeline in Jenkins 🡪 and configure pipeline and check the status of work.

Pipeline:

Tools 🡪 maven ‘maven3’

Stage 1: Checkout git code

Stage 2: Sonar Analysis 🡪 mvn clean package

```mvn sonar:sonar -Dsonar.url=http://localhost:9000/ -Dsonar.login=sonar\_token -Dsonar.projectName=petclinic \

-Dsonar.java.binaries=. \

-Dsonar.projectKey=petclinic ```

Now check the report in SonarQube server. Overview and issues.

Maven: It is project build automation tool. Like other build tools, maven makes building process simplier.

It automates everyday developer goals. 1.Code compilation, 2.tests running, 3.dependency import, 4.executable file creation

Types of project builds: imperative or declarative

Imperative: with ant developer tells “how” should everything be build

Declarative: maven and Gradle knows “how” should be done. Developer tells “what” to build

Advantages:

* Unifies the approach to project assembly.
* Maven approaches are defined by convesions, so it allows developer to form good practices for working with a project.

Basic Concepts:

Pom.xml (project object model) 🡪 is a file containing all configuration details about project assembly.

Artifact 🡪 executable jar/war/ear file.

{user}/.m2/ 🡪 path to local repository on your machine

/target 🡪 folder, where is stored an executable file, compiled classes, test reports etc.

* groupID 🡪 anything like better practice reverse of domain (com.unknown)
* artifactID 🡪 file name of project
* version 🡪 package file version
* packaging 🡪 file type like jar, war, ear types.

Properties Block 🡪 like we pass environment (<commons-lang3.version>3.12.0</commons-lang3.version>), we will get back these values in dependencies block.

Repositories Block 🡪 we could mention repository name here

Dependencies block 🡪 here also we mentioned group id, artifact id, version. Here you could mention version already pass value in environment (properties) example (<version>${commons-lang3.version}</version>)

Scope 🡪mention compile, provided like these are libraries.

Build block 🡪 configure plugins.

Circle CI:

It is act like continuous integration tool. It only fetches code from anywhere, like Jenkins have to store the code locally and Jenkins need to install for work it, but Circle CI is no need to install, we have login using our mail id.

Search google in circle ci. Need to sign up.

And clone our GitHub, then we have all repositories what available in GitHub.

Circle CI we are using Yml file to create pipeline instead of groovy in Jenkins.

Windows Active Directory: -

Apache

LDAP

Configure windows 2019 server 🡪 add role for AD

Configure networking

Create an EC2: select more AMI, then select windows server 2019 datacenter edition

We are using normally 24 or 48 hrs, so cost is around 250rs for t2.medium instance.

Windows ec2 machine connect using instance connect

Open the server manager on remote machine

Add roles 🡪 next 🡪next🡪next🡪server rules🡪 active directory domain services.

Then install the role for active directory.

Click on the ! simple on right side corner of the upside.

Then click promote this server as domain controller.

Add a new forest

Give the root domain name 🡪next

Provide password 🡪 restore password – once loss it will help to us

Netbios name 🡪 CORP 🡪next

Once pre requisite check done 🡪 then install 🡪 once done it will reboot the machine.

Based on our VM time will be taken to install.

When we reconnect 🡪 CORP\administrator, password same as provided by AWS

Connect by port 389 🡪 non secure port

636 🡪 LDAPS

Two level firewall 🡪O/S level(AD) and network level(AWS) 🡪 3389 for remote desktop connection

To add 389 in AWS also.

Search firewall 🡪 firewall advance security 🡪 go to inbound rule 🡪

Go to AWS 🡪 SG edit inbound rules 🡪 add 389 port in SG 🡪

In Mobaxterm 🡪 local terminal 🡪 check ‘nc -v publicIP 389’ 🡪hit enter

Check apache LDAP connection server (don’t know the method)