Jenkins

CI/CD Pipeline

Install Jenkins

A LTS (Long-Term Support) release is chosen every 12 weeks from the stream of regular releases as the stable release for that time period. It can be installed from the debian-stable apt repository.

1. curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo tee \
   /usr/share/keyrings/jenkins-keyring.asc > /dev/null
2. echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \
   https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
   /etc/apt/sources.list.d/jenkins.list > /dev/null
3. sudo apt-get update
4. sudo apt-get install jenkins

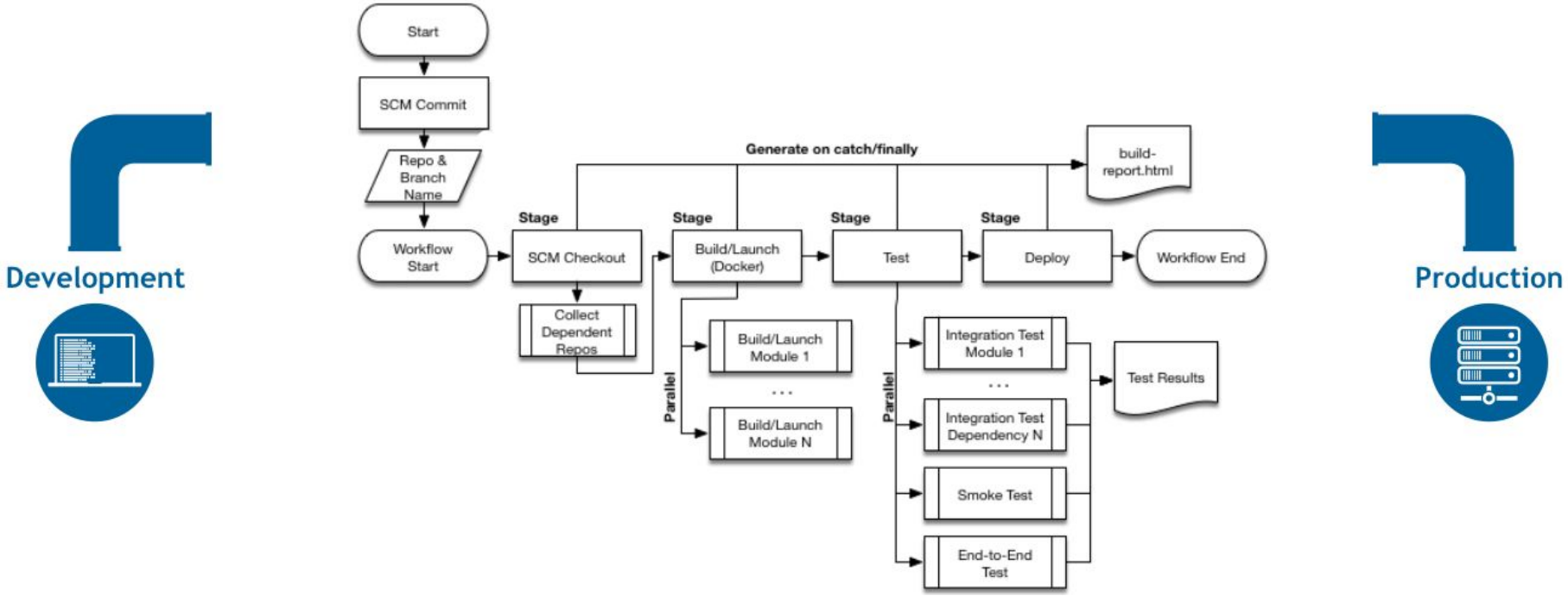
Jenkins Pipeline

- **Jenkins Pipeline (or simply "Pipeline") is a suite of plugins which supports implementing and integrating continuous delivery pipelines into Jenkins.**

- **A continuous delivery pipeline is an automated expression of your process for getting software from version control right through to your users and customers.**

- **Jenkins Pipeline provides an extensible set of tools for modeling simple-to-complex delivery pipelines "as code". The definition of a Jenkins Pipeline is typically written into a text file (called a Jenkinsfile) which in turn is checked into a project’s source control repository.**

Stages of a PipeLine



How Pipelines Can be Built

A Pipeline can be created in one of the following ways:

- **Through Blue Ocean - after setting up a Pipeline project in Blue Ocean, the Blue Ocean UI helps you write your Pipeline's Jenkinsfile and commit it to source control.**

- **Through the classic UI - you can enter a basic Pipeline directly in Jenkins through the classic UI.**
- **In SCM - you can write a Jenkinsfile manually, which you can commit to your project's source control repository. [3]**

The syntax for defining a Pipeline with either approach is the same, but while Jenkins supports entering Pipeline directly into the classic UI, it is generally considered best practice to define the Pipeline in a Jenkinsfile which Jenkins will then load directly from source control.

Running a Docker Pipeline

Jenkinsfile (Declarative Pipeline)

```
/* Requires the Docker Pipeline plugin */
pipeline {
    agent { docker { image 'maven:3.9.8-eclipse-temurin-21-alpine' } }
    stages {
        stage('build') {
            steps {
                sh 'mvn --version'
                }
        }
    }
}
```

Terraform through Jenkins

Assignment: Create a Git Project that hosts a terraform project to create 2 EC2 instances and shows their publicDNS. Checkout the project through jenkins and run terraform using the jenkins pipeline.

https://spacelift.io/blog/terraform-jenkins

Assignment

1. Build a Java app with Maven
   a. https://www.jenkins.io/doc/tutorials/build-a-java-app-with-maven/

7. You can now click on **Maven tutorial** on the top left, and then on **Stages** at the left. It will list your previous Pipeline runs in reverse chronological order.