

Software Testing

#07 - Jenkins

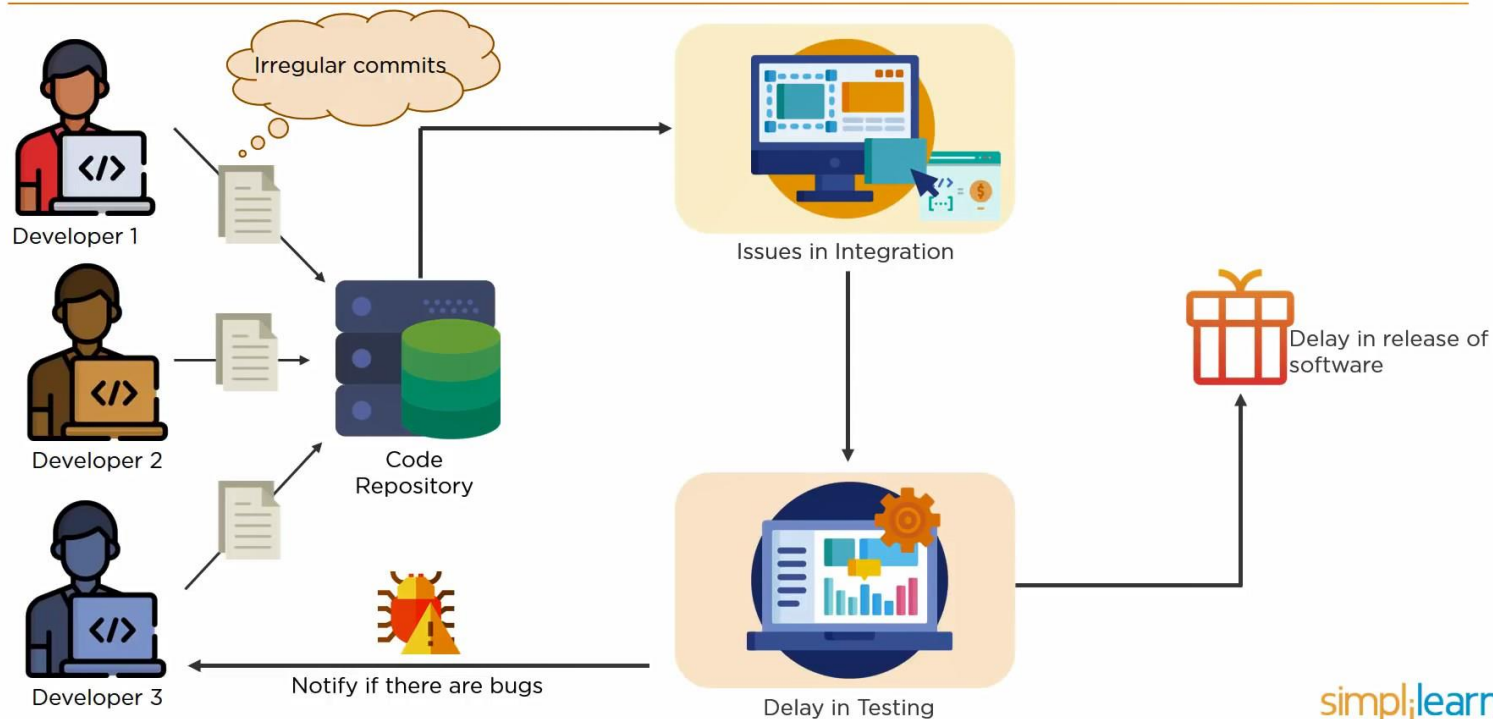


Herman Kabetta

hermanka.github.io



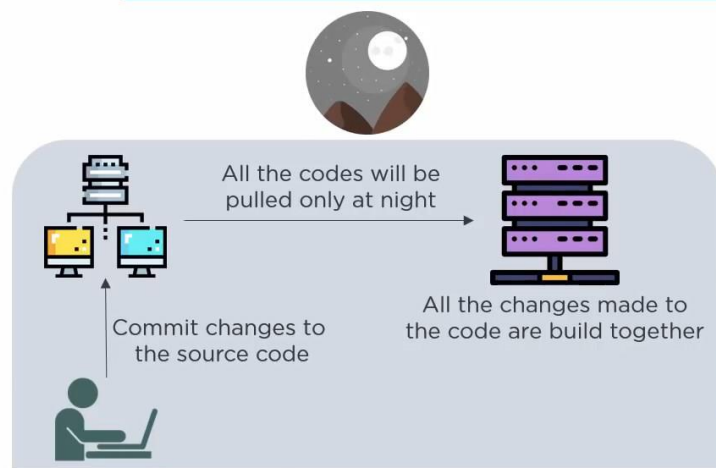
Before Jenkins



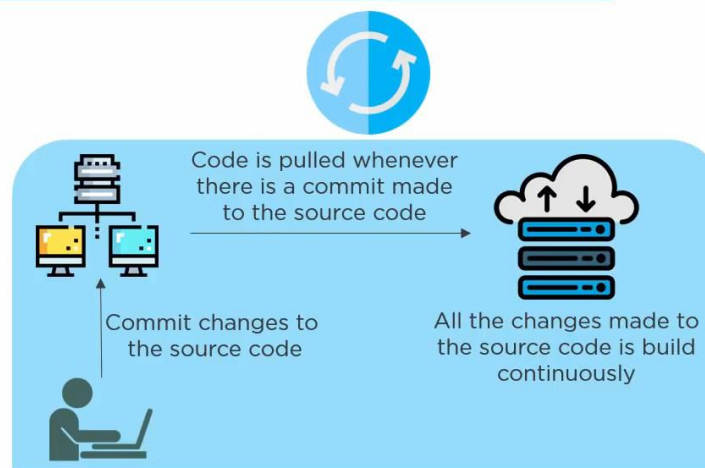


What is Jenkins?

Jenkins is a Continuous Integration tool that allows continuous development, test and deployment of newly created codes



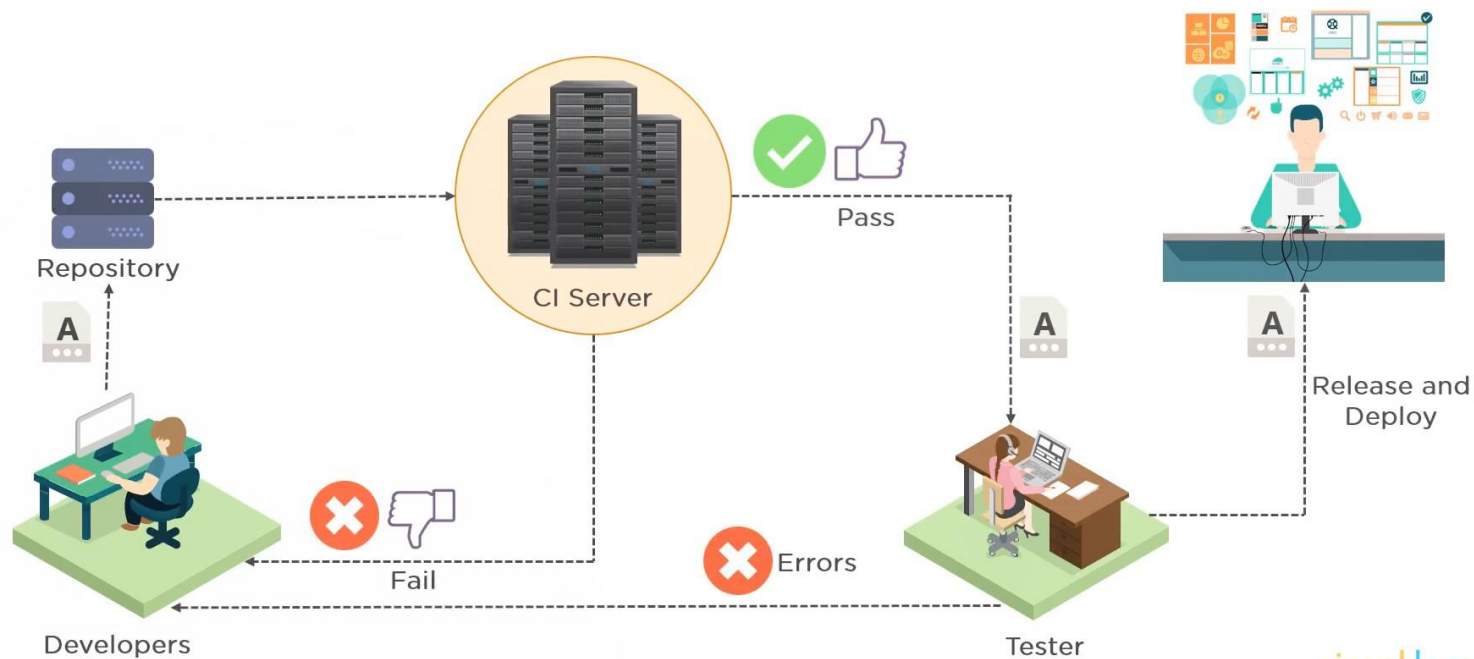
Nightly build and integration



Continuous build and Integration



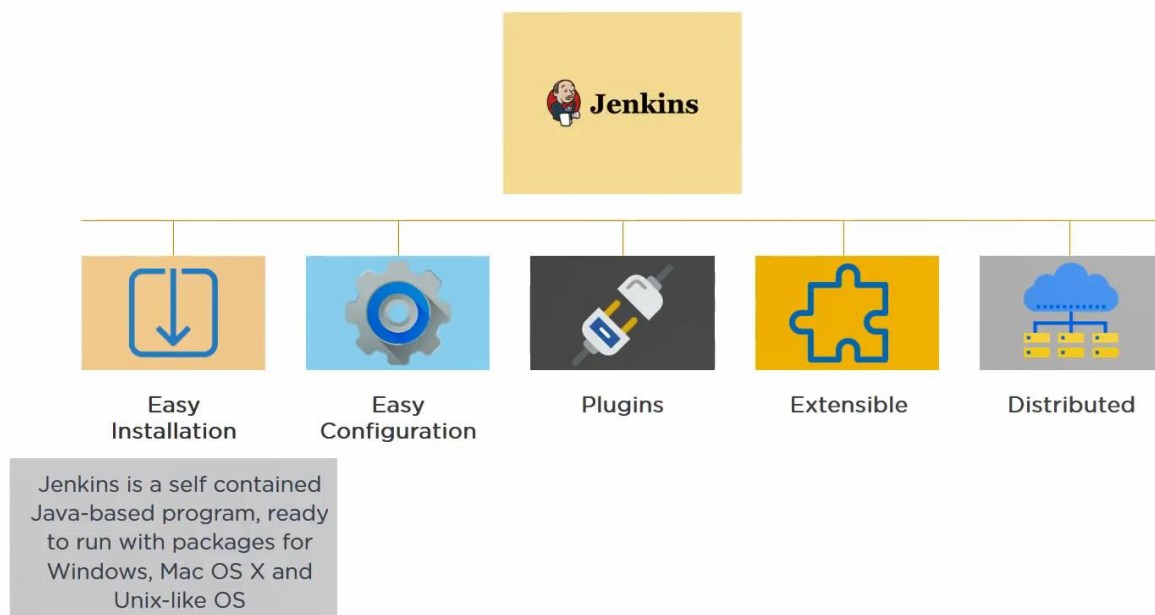
What is Continuous Integration?



simplilearn

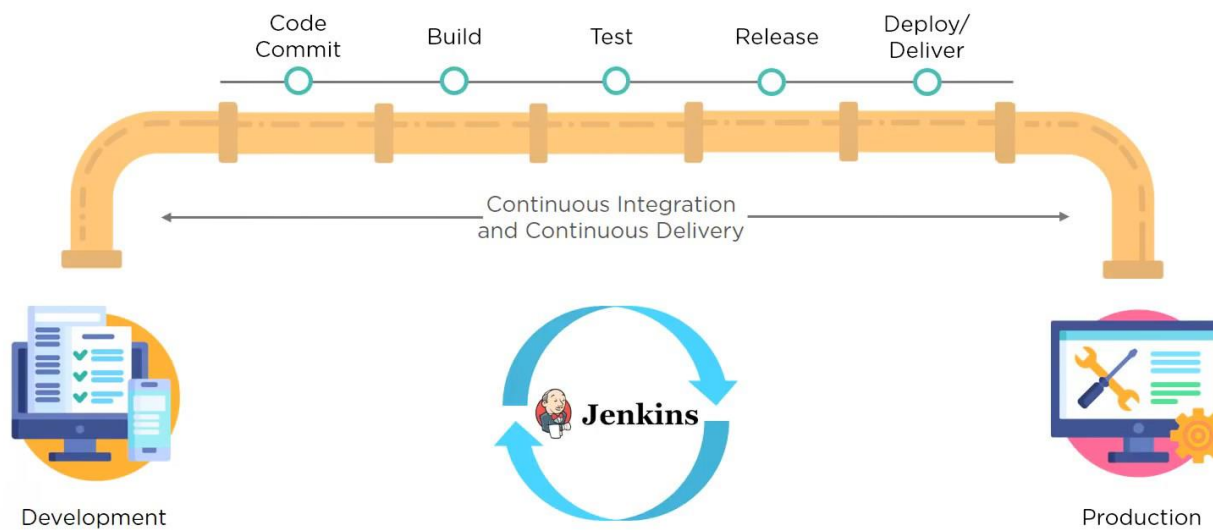


Features of Jenkins



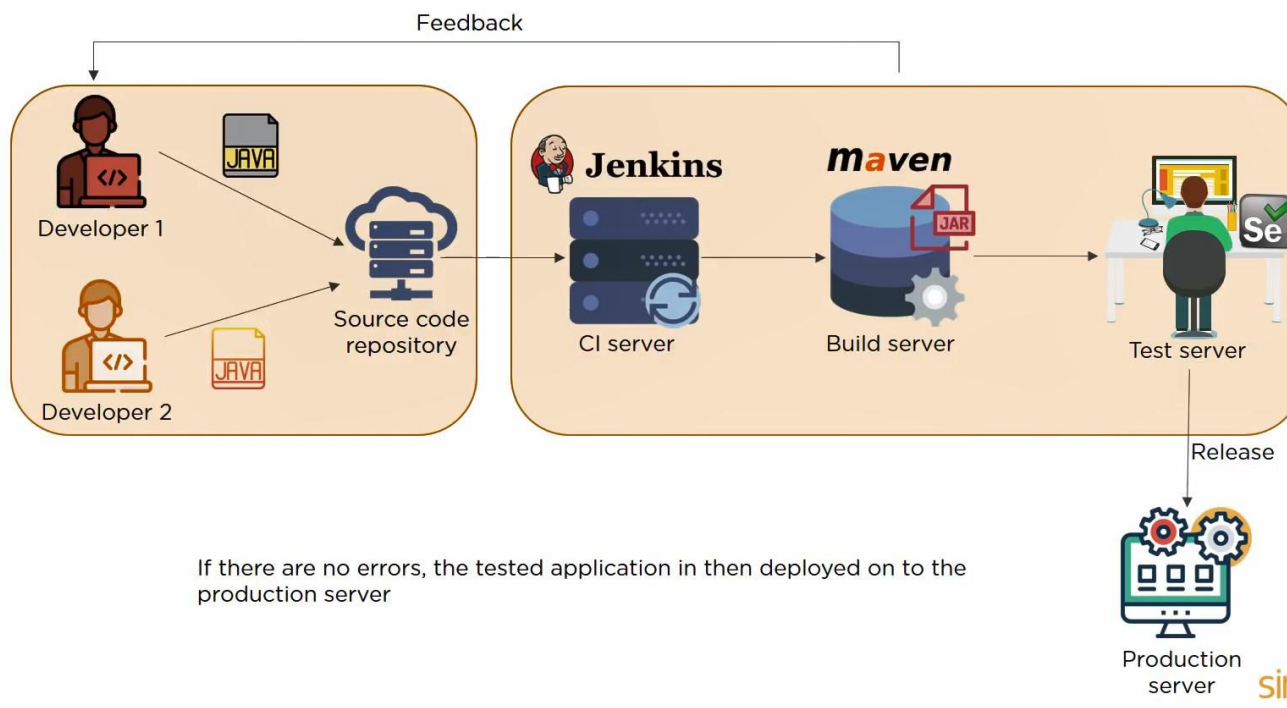


Jenkins Pipeline



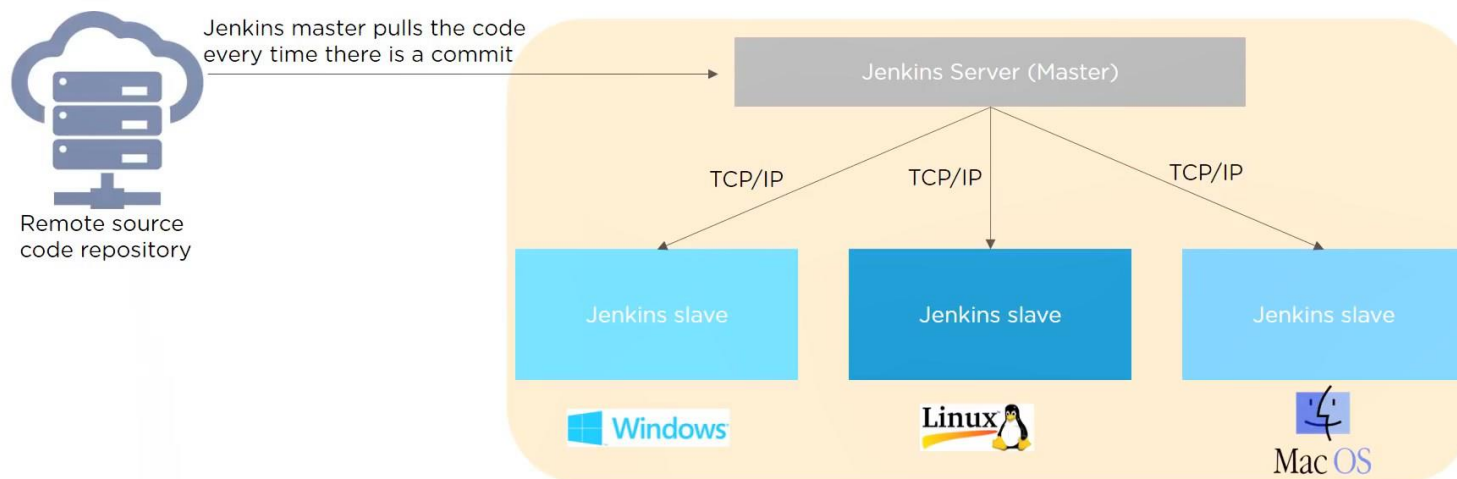


Jenkins Architecture





Jenkins Master-Slave Architecture



- Jenkins master distributes its workload to all the slaves
- On request from Jenkins master, the slaves carry out builds and tests and produce test reports



Create Maven Project

New Project

Steps

1. Choose Project
2. ...

Choose Project

Filter:

Categories:

- Java
- JavaFX
- Maven
- NetBeans Modules
- Samples

Projects:

- Java Application
- JavaFX Application
- OSGi Bundle
- NetBeans Module
- NetBeans Application
- POM Project
- Project from Archetype
- Project with Existing POM

Description:

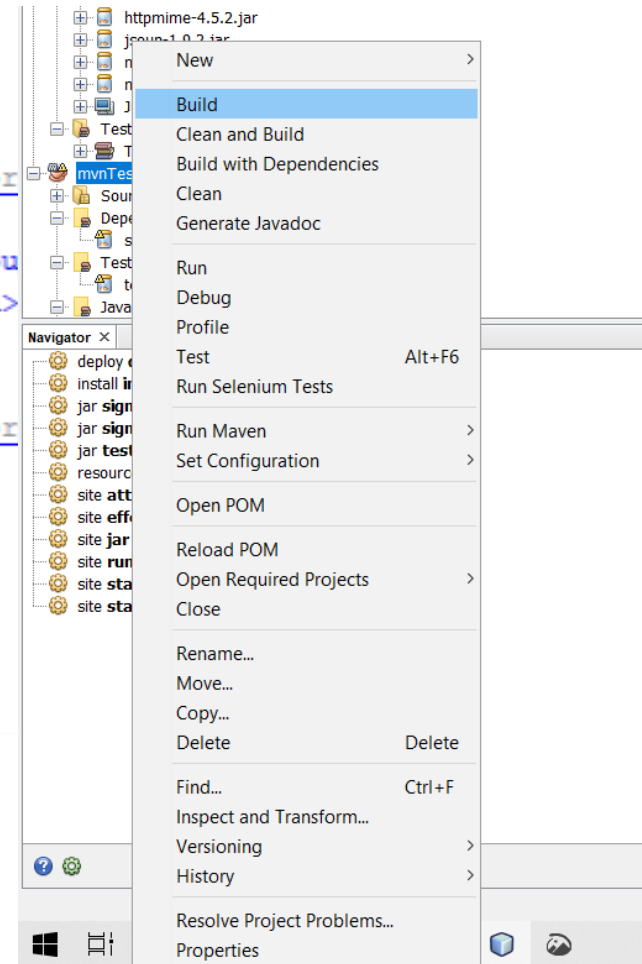
A simple Java SE application using Maven.

< Back Next > Finish Cancel Help



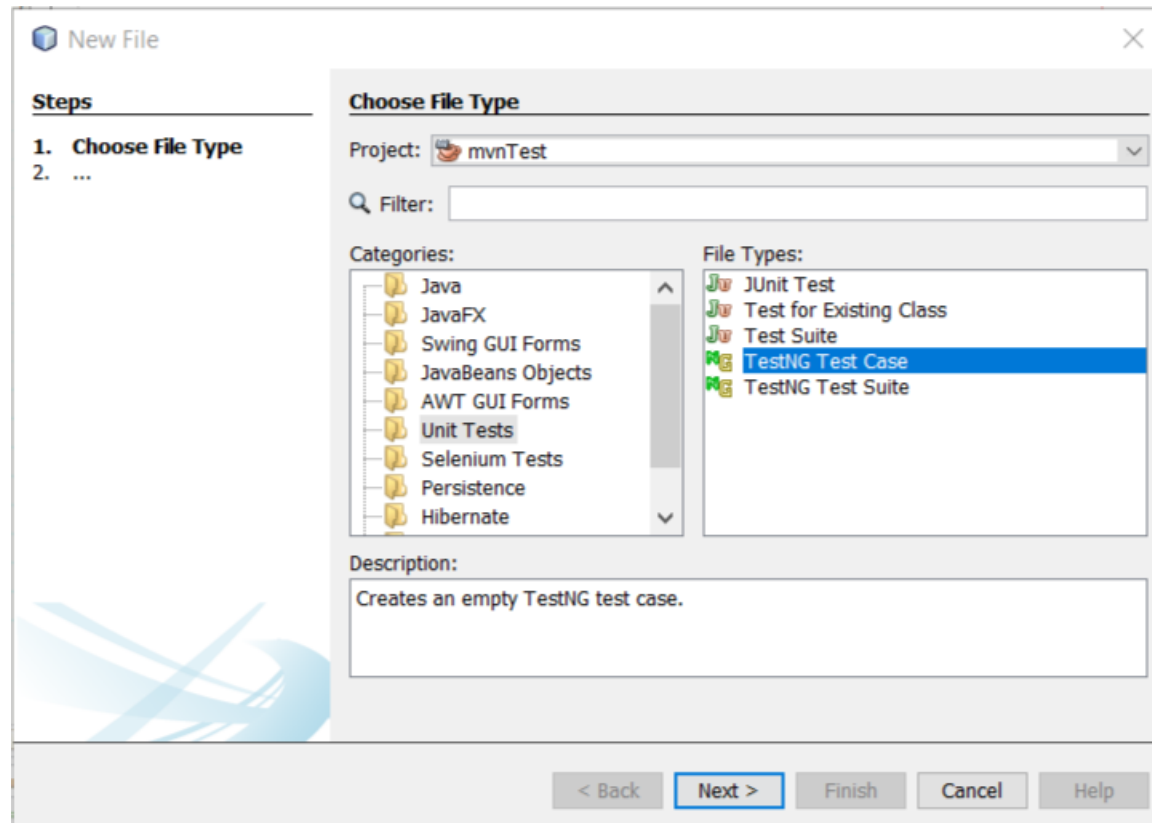
Create Maven Project

```
<dependencies>
  <!-- https://mvnrepository.com/artifact/org.seleniumhq.selenium/selenium-java -->
  <dependency>
    <groupId>org.seleniumhq.selenium</groupId>
    <artifactId>selenium-java</artifactId>
    <version>3.141.59</version>
  </dependency>
  <!-- https://mvnrepository.com/artifact/org.testng/testng -->
  <dependency>
    <groupId>org.testng</groupId>
    <artifactId>testng</artifactId>
    <version>6.14.3</version>
    <scope>test</scope>
  </dependency>
</dependencies>
```





Create TestNG Suite & Case





TestNG Case & Suite

```
public class TestCase1 {

    WebDriver driver = null;

    @BeforeTest
    public void setUp() {
        System.setProperty("webdriver.chrome.driver", "path\\to\\chromedriver.exe");
        ChromeOptions options = new ChromeOptions();
        options.addArguments("--headless");
        driver = new ChromeDriver(options);
    }

    @Test
    public void firstTry() {
        driver.get("https://google.com");
        String expectedTitle = "Google";
        String actualTitle = driver.getTitle();
        Assert.assertEquals(actualTitle, expectedTitle);
    }

    @AfterTest
    public void tearDown() {
        driver.close();
        driver.quit();
    }
}

<test name="All tests">
    <classes>
        <class name="TestCase1" />
    </classes>
</test>
```

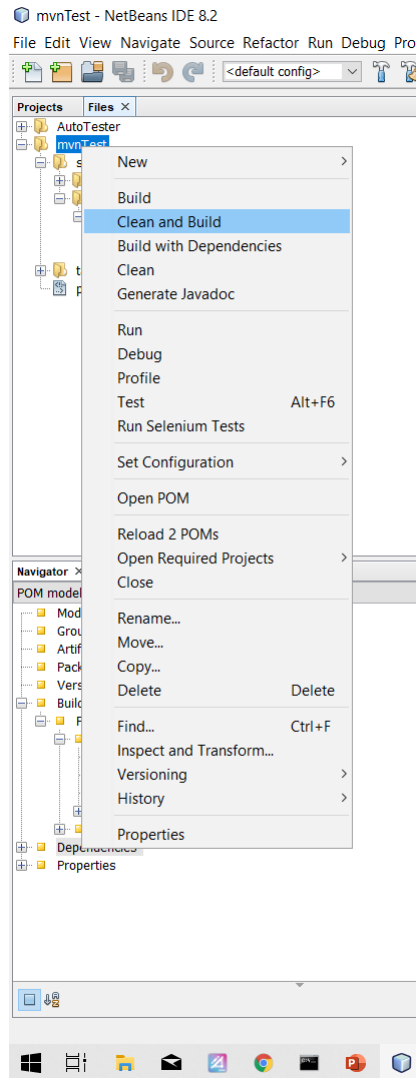


Add to pom.xml

```
<build>
  <plugins>
    <!-- https://mvnrepository.com/artifact/org.apache.maven.plugins/maven-compiler-plugin -->
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-compiler-plugin</artifactId>
      <version>3.8.1</version>
      <configuration>
        <source>1.8</source>
        <target>1.8</target>
      </configuration>
    </plugin>
    <!-- https://mvnrepository.com/artifact/org.apache.maven.plugins/maven-surefire-plugin -->
    <plugin>
      <groupId>org.apache.maven.plugins</groupId>
      <artifactId>maven-surefire-plugin</artifactId>
      <version>2.22.2</version>
      <inherited>true</inherited>
      <configuration>
        <suiteXmlFiles>
          <suiteXmlFile>src/test/java/TestSuite1.xml</suiteXmlFile>
        </suiteXmlFiles>
      </configuration>
    </plugin>
  </plugins>
</build>
```



Clean and Build





Install Jenkins

← → ↺ 🔒 jenkins.io ☆ 🇺🇸 🌐 🔄

Jenkins cd ▾

Blog Documentation ▾ Plugins Community ▾ Subprojects ▾ About ▾ English ▾

Long-term Support (LTS)

LTS (Long-Term Support) releases are chosen every 12 weeks from the stream of regular releases as the stable release for that time period. [Learn more...](#)

[Changelog](#) | [Upgrade Guide](#) | [Past Releases](#)

📦 Deploy Jenkins 2.204.1

📦 Download Jenkins 2.204.1 for:

Docker

FreeBSD

Gentoo 🌐

macOS 🌐

OpenBSD 🌐

openSUSE

Red Hat/Fedora/CentOS

Ubuntu/Debian

Windows

Generic Java package (.war)

Weekly

A new release is produced weekly to deliver bug fixes and features to users and plugin developers.

[Changelog](#) | [Past Releases](#)

📦 Download Jenkins 2.214 for:

Arch Linux 🌐

Docker

FreeBSD 🌐

Gentoo 🌐

macOS 🌐

OpenBSD 🌐

openSUSE

Red Hat/Fedora/CentOS

Ubuntu/Debian

OpenIndiana Hipster 🌐

Windows

Generic Java package (.war)

kins

s at any scale

source automation
provides hundreds of
building, deploying
any project.

Download

Jenkins

2019 Elections

• Governing Board



Run Jenkins

```
C:\Windows\System32\cmd.exe - java -jar jenkins.war
```

```
Microsoft Windows [Version 10.0.18362.239]  
(c) 2019 Microsoft Corporation. All rights reserved.  
  
D:\AJAR\Software Testing\Tools>iava -jar jenkins.war  
Running f  
webroot:
```


localhost:8080

Getting Started

Getting Started



Run Jenkins

**Jenkins**

search ?

Jenkins ▶

New Item

People

Build History

Manage Jenkins

My Views

Lockable Resources

Credentials

New View

Welcome to Jenkins!

Please **create new jobs** to get started.

Build Queue ⌵

No builds in the queue.

Build Executor Status ⌵

- 1 Idle
- 2 Idle



Create item

Enter an item name

» Required field



Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



Maven project

Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.



Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



GitHub Organization

Scans a GitHub organization (or user account) for all repositories matching some defined markers.



Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.

OK



Manage Jenkins > Global Tool Configuration

Maven Configuration

Default settings provider

Settings file in filesystem

File path

C:\Program Files\NetBeans 8.2\java\maven\bin

Default global settings provider

Use default maven global settings

JDK

JDK installations

Add JDK



JDK

Name

jdk1.8.0

JAVA_HOME

C:\Program Files\Java\jdk1.8.0_162



Install automatically

Add JDK

List of JDK installations on this system



Use a Freestyle Job

Build



Execute Windows batch command

Command

```
c:  
cd C:\Users\herma\Documents\NetBeansProjects\mvnTest  
mvn clean test  
echo success
```

See [the list of available environment variables](#)

Add build step ▼




TestNG in Jenkins

 **Jenkins**

admin | log out

Jenkins ▶ Plugin Manager

 [Back to Dashboard](#)

 [Manage Jenkins](#)

Filter:

Updates

Available

Installed

Advanced

Install ↓

Name

Version



[TestNG Results](#)

1.15

This plugin integrates [TestNG test reports](#) to Jenkins.

Install without restart

Download now and install after restart

[Update information](#)

obtained: 1 hr 4 min ago

Check now



TestNG in Jenkins

General

Source Code Management

Build Triggers

Build Environment

Build

Post-build Actions

☐ Inspect build log for published Gradle build scans

☐ With Ant

Build

Execute Windows batch command

Aggregate downstream test results

Archive the artifacts

Build other projects

Publish JUnit test result report

Publish Javadoc

Publish TestNG Results

Record fingerprints of files to track usage

Git Publisher

E-mail Notification

Editable Email Notification

Set GitHub commit status (universal)

Set build status on GitHub commit [deprecated]

Delete workspace when build is done

Advanced...

Save

Apply



TestNG in Jenkins

☒ Use custom workspace

Directory

C:\Users\herma\Documents\NetBeansProjects\mvnTest\target\surefire-reports

Display Name

☐ Keep the build logs of dependencies



TestNG in Jenkins

Project WebdriverTest

 [add description](#)

[Disable Project](#)



[TestNG Results](#)



[Workspace](#)



[Recent Changes](#)



[Latest Test Result](#) (no failures)

TestNG Results Trend

