DevOps

By Poornima Telsang
Pratima Bhat
Shrivalli Mallya

Contents

- What is DevOps?
- DevOp Stages
- DevOp Tool
- Maven
- Jenkins
- Git

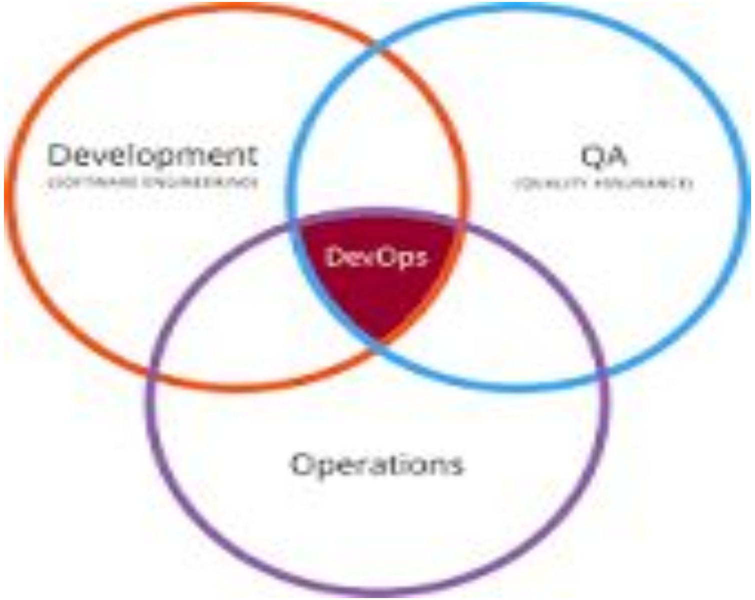
What is DevOps?

Devops is an enterprise software development phrase used to mean a type of agile relationship between development and IT operations.

E.g : Coding

Build

- DevOps is the practice of operations and development engineers participating together in the entire service lifecycle.



DevOps Tools

- Git
- Maven
- Hudson
- Jenkins

What is Maven?!

Powerful build automation tool used for Java projects based on POM

Two critical aspects addressed by Maven:

1) Describes how software is built..
2) Describes dependencies..

How Maven works?

Maven uses conventions to build project

Only exceptions have to be declared in XML file

An XML specifies the project’s Dependencies on other external modules , components , build order and required plugins.

Features of Maven..

Simple setup

Consistent usage

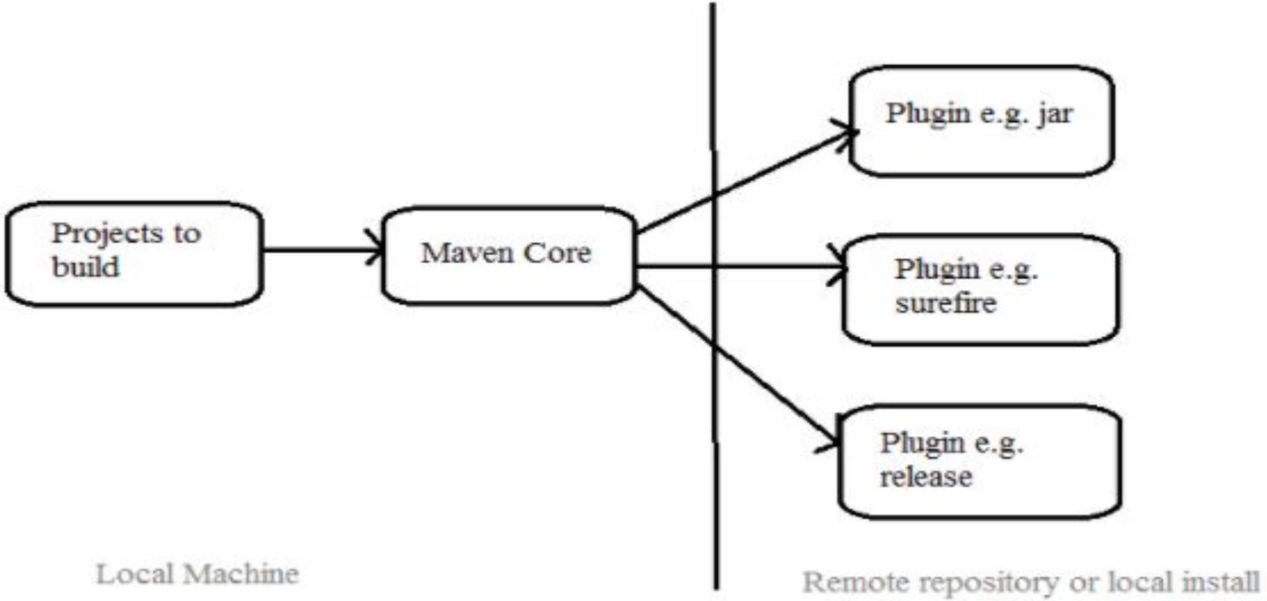
Dependency management

Repository

Extensible via plugins

Backward compatibility

Maven Architecture



HISTORY OF JENKINS

Jenkins was originally developed as the Hudson project. Hudson's creation started in summer of 2004 at Sun Microsystem.

At the JavaOne conference in May 2008 the software won the Duke's Choice Award in the Developer Solutions category.

Hudson project was renamed to Jenkins after Oracle claimed the right to the name.

In 2011, creator Kohsuke Kawaguchi received an O'Reilly Open Source Award for his work on the Hudson/Jenkins project.

WHY JENKINS?

Jenkins is an open source automation tool written in Java with plugins built for Continuous Integration purpose.

Jenkins is used to build and test your software projects continuously making it easier for developers to integrate changes to the project, and making it easier for users to obtain a fresh build

With Jenkins, organizations can accelerate the software development process through automation.

Jenkins achieves Continuous Integration with the help of plugins.

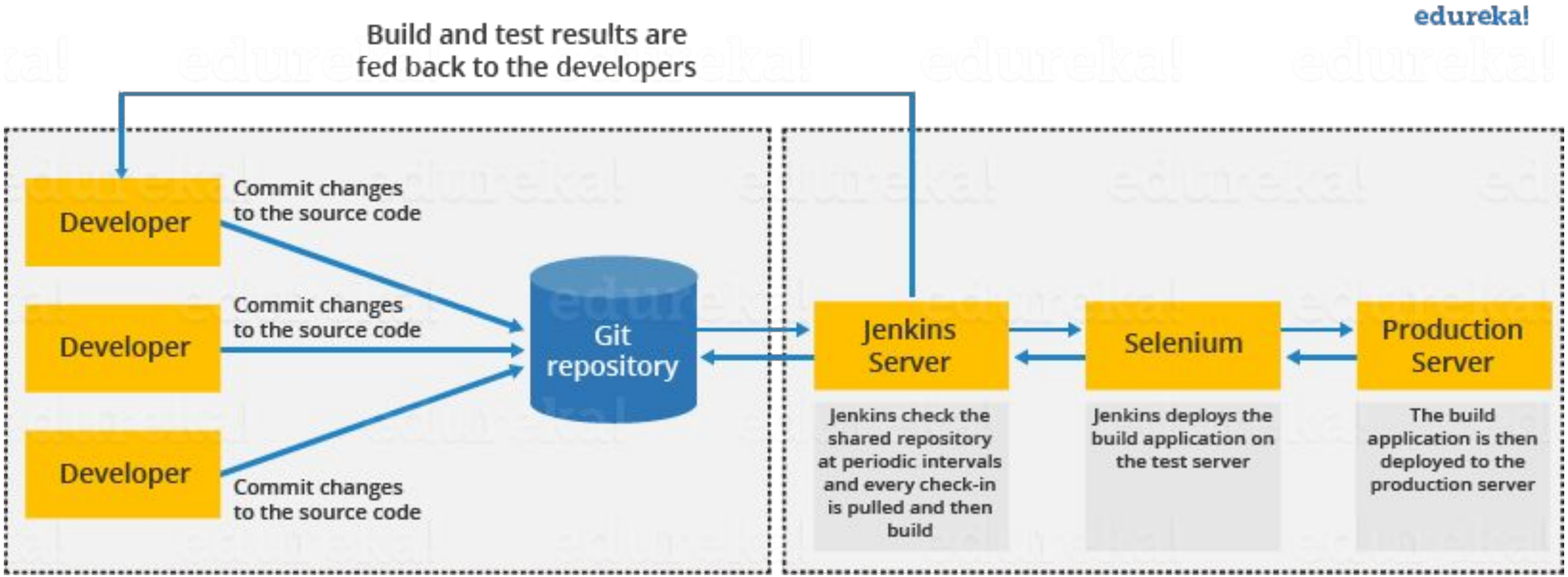
Example for Plugins are: Git, Maven 2 project, Amazon EC2, HTML publisher etc.

Why is Jenkins Better than other Integration tools

Adoption: Jenkins is widespread, with more than 147,000 active installations and over 1 million users around the world.

Plugins: Jenkins is interconnected with well over 1,000 plugins that allow it to integrate with most of the development, testing and deployment tools.

Generic flow diagram of Continuous Integration



edureka!
Build and test results are fed back to the developers
Developer
Commit changes to the source code
Developer
Commit changes to the source code
Developer
Commit changes to the source code
Git repository
Jenkins Server
Jenkins check the shared repository at periodic intervals and every check-in is pulled and then build
Selenium
Jenkins deploys the build application on the test server
Production Server
The build application is then deployed to the production server

ADVANTAGES

It is an open source tool with great community support.

It is easy to install.

It has 1000+ plugins to ease your work. If a plugin does not exist, you can code it and share with the community.

It is free of cost.

It is built with Java and hence, it is portable to all the major platforms.

APPLICATIONS

Jenkins lowers the Effort of repeated coding.

Integration of Individual Jobs.

Effortless Auditing.

Greater data support for project management.

Manual Tests option.

Decrease Code Review Time.

Code deployment to Production.

Increased Code Coverage

GIT

- Git is a distributed version control tool that supports distributed non-linear workflows by providing data assurance for developing quality software.
- Few Git commands

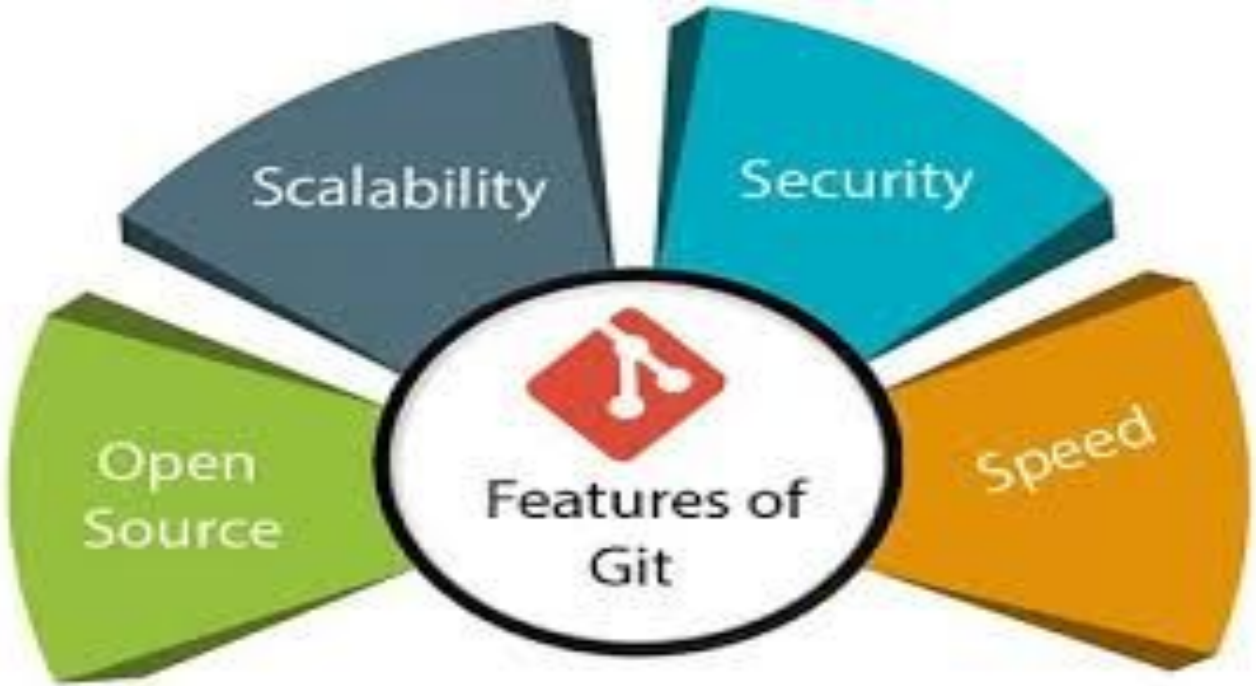
```
$ git add

$ git status
```

Why Git in DevOps?

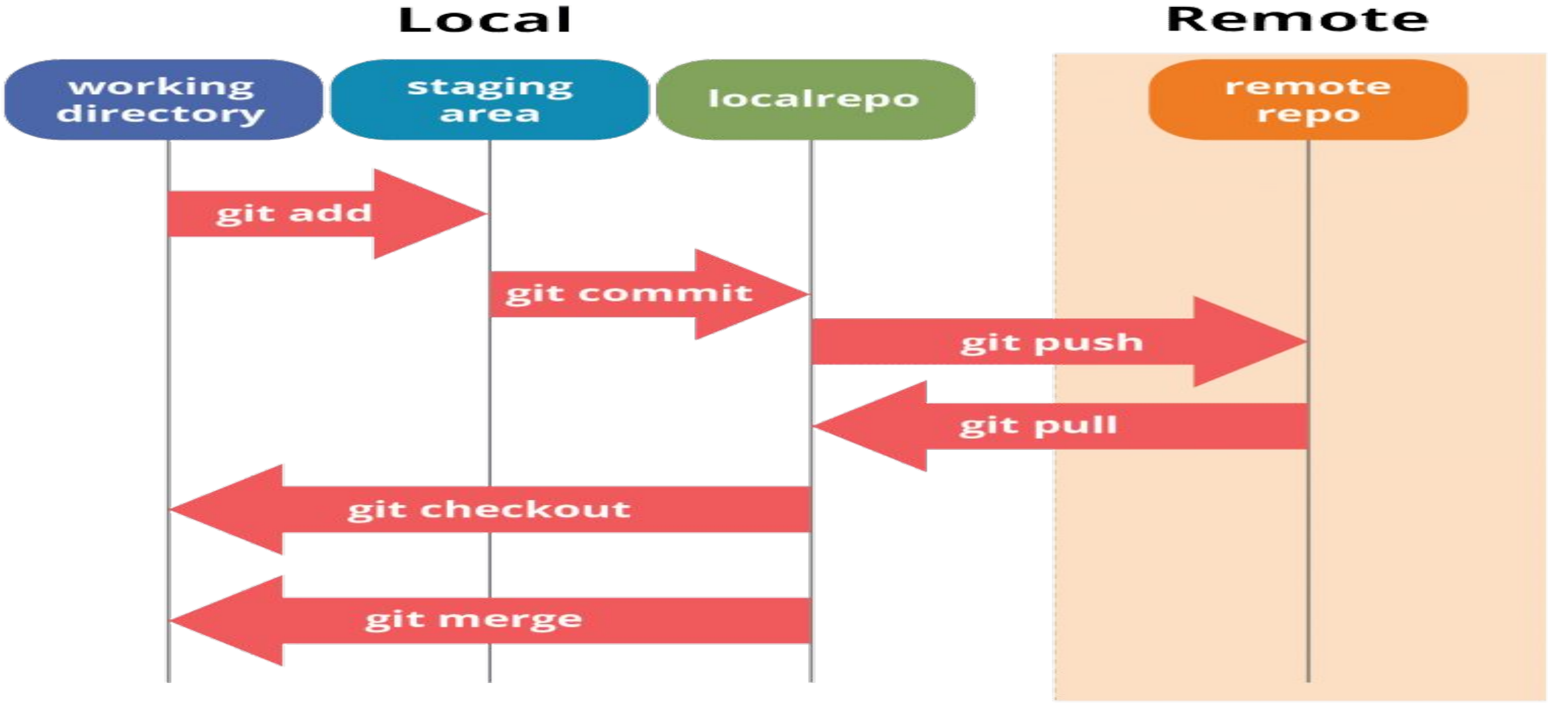
- **DevOps** is an approach to improve the SDLC process by using numerous tools for automation. **Git is used** for 'version control' in **DevOps**.

- **Git** manages team files for large and small projects. This allows the team to continuously improve its product

Features of GIT



GIT Architecture



Resources :

- https://www.edureka.co/blog/git-tutorial/
- https://www.edureka.co/blog/devops-tutorial
- https://www.edureka.co/blog/maven-tutorial/

THANK YOU !!!!!