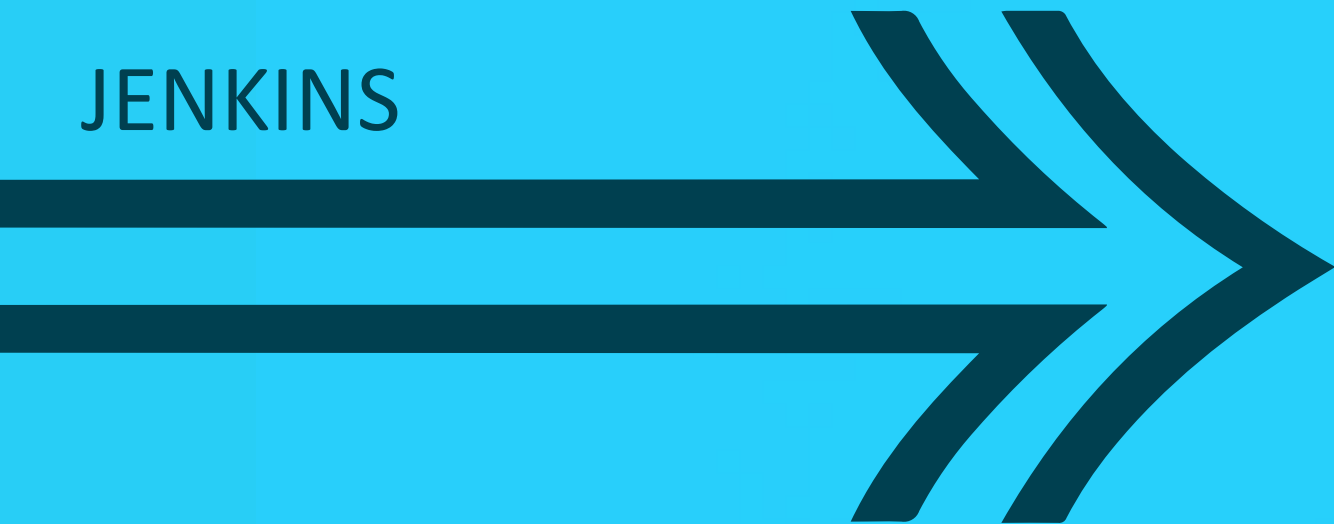




JENKINS





What is Jenkins?

- Jenkins is an open-source automation server
- Helps automate the parts of software development
 - building
 - testing
 - deploying
- facilitating continuous integration and continuous delivery (CI/CD).

History:

- Originally developed as the Hudson project in 2004
- renamed to Jenkins in 2011.

Features of Jenkins

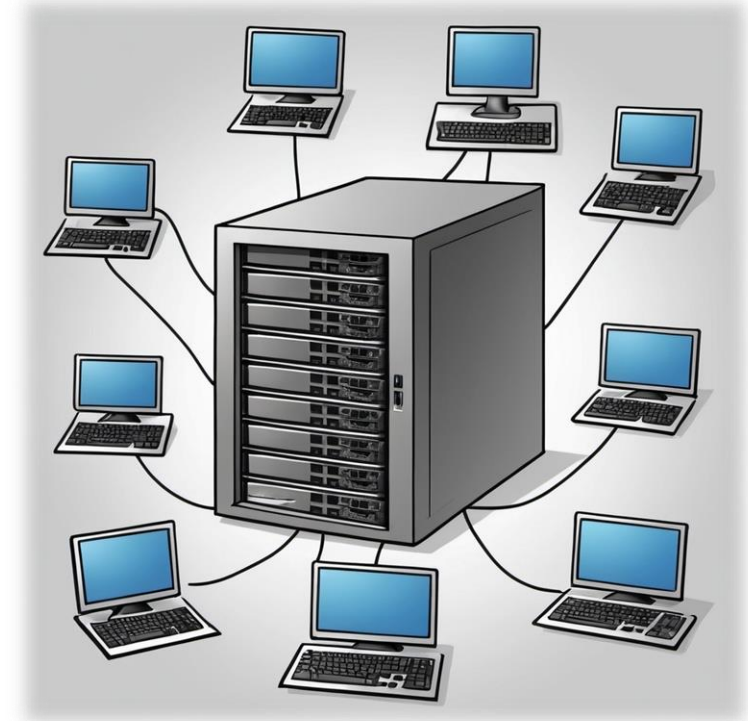
- **Extensible:**
 - Large plugin ecosystem.
- **Distributed Builds:**
 - Support for building across multiple platforms.
- **Easy Installation:**
 - Simple setup process.
- **Each commit triggers a build**
- **Extensive Community Support**

QA Jenkins Nodes

Jenkins Slaves/Nodes offload the execution of tasks to distributed systems.

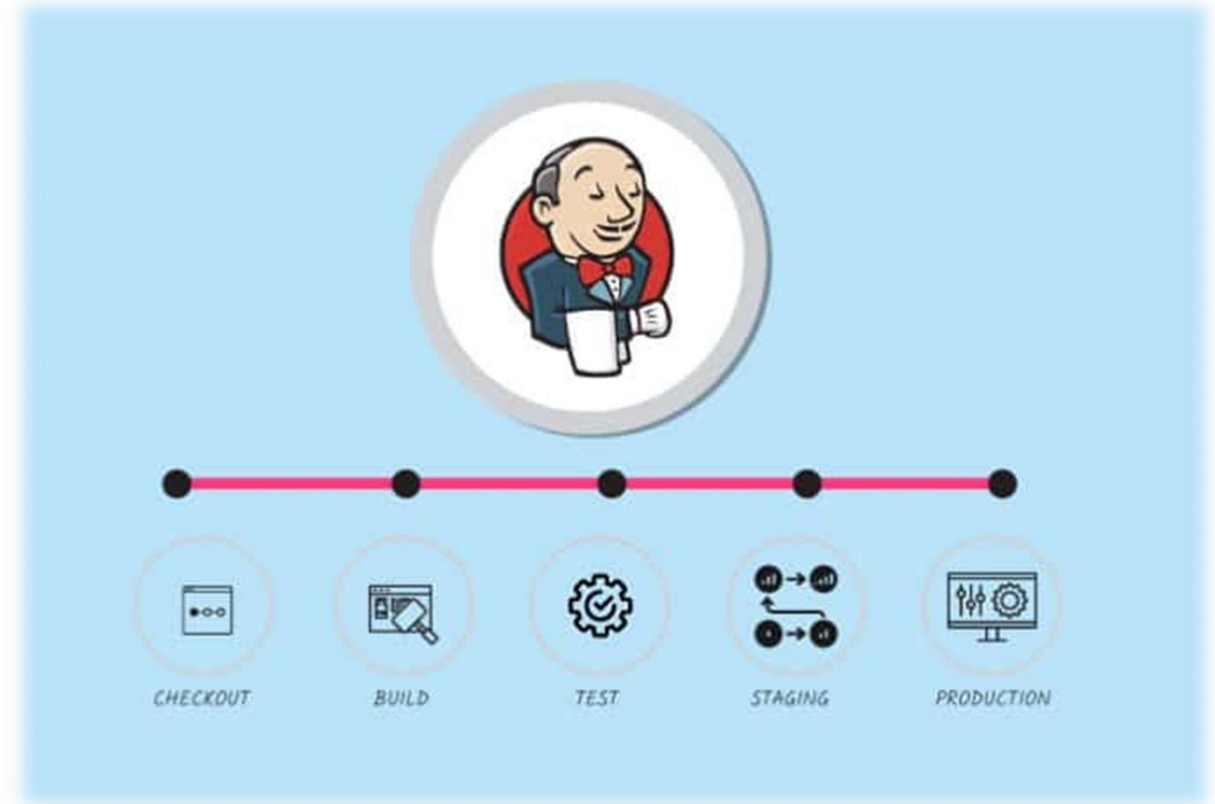
- **Benefits**

- **Scalability** by distributing the build
- **Parallel Execution** of multiple jobs
- Agents can be placed in different **geographies**
- **Isolation** environment with different set up



QA Jenkins Pipeline

- **Is a suite of plugins**
 - Supports implementing and integrating CI/CD
- **Types of Pipelines:**
 - Declarative Pipeline
 - Scripted Pipeline



Benefits of Jenkins Pipeline

- **Version Control:**
Pipeline as Code.
- **Complex Workflow Integration:**
Supports complex build workflows.
- **Flexibility:**
Easily integrates with other tools and technologies.
- **Durability:**
Can survive Jenkins restarts and agent failures.



Basic Declarative Pipeline example

Steps are tasks
within each stage

```
pipeline {  
  agent any  
  stages {  
    stage('Build') {  
      steps {  
        echo 'Building...'  
      }  
    }  
    stage('Test') {  
      steps {  
        echo 'Testing...'  
      }  
    }  
    stage('Deploy') {  
      steps {  
        echo 'Deploying...'  
      }  
    }  
  }  
}
```

Build is a
major phase

And so is
Deploy



Summary:

- Jenkins is a powerful tool for CI/CD.
- Jenkins Pipelines enable automation of complex workflows.
- Jenkins Agents allow for scalable and flexible build environments



THANK YOU

Hope you enjoyed this learning journey.

