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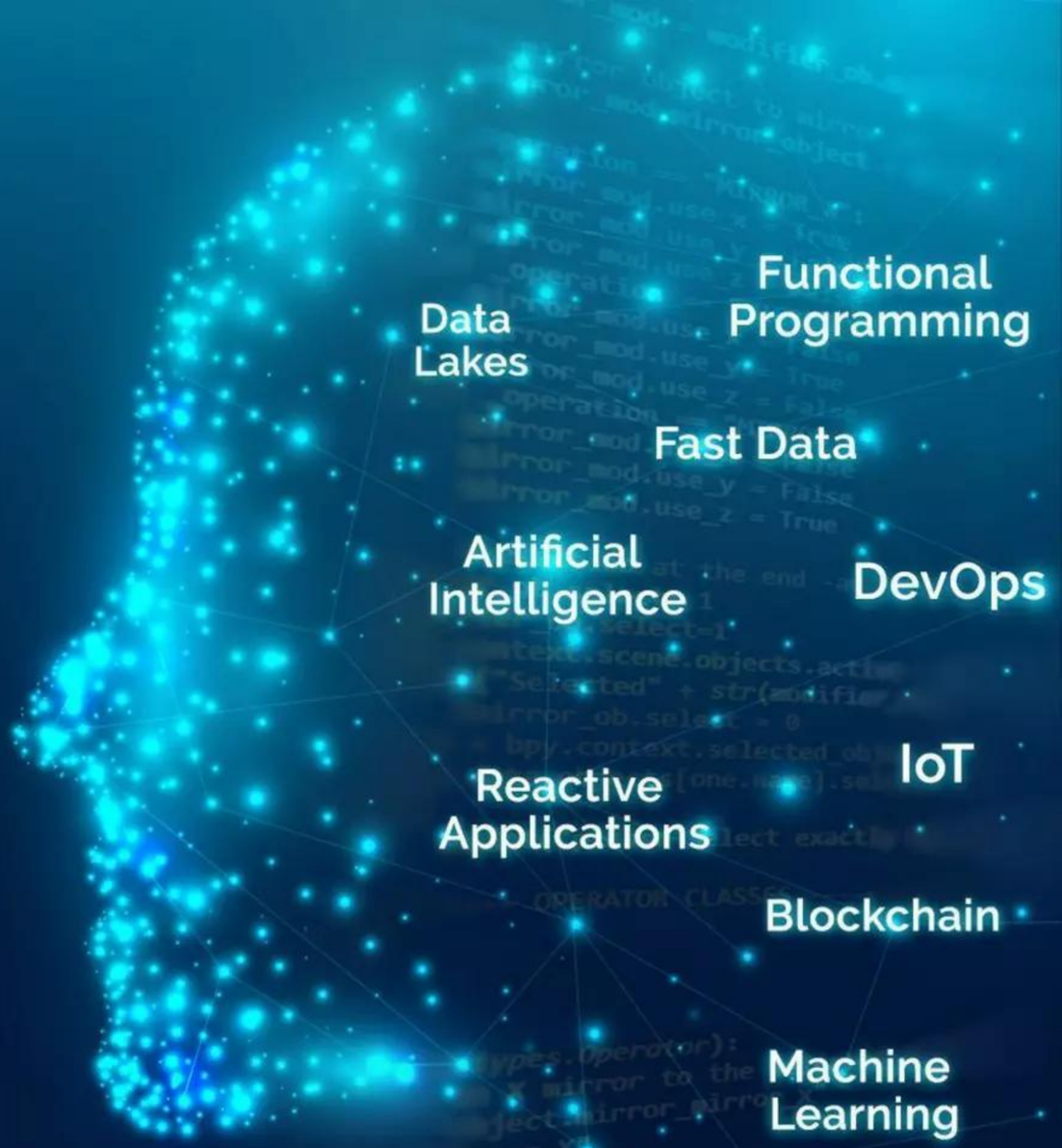
Introduction To CI/CD



Presented By: Prashant Trivedi

Our Agenda

01 What is **CI/CD**?

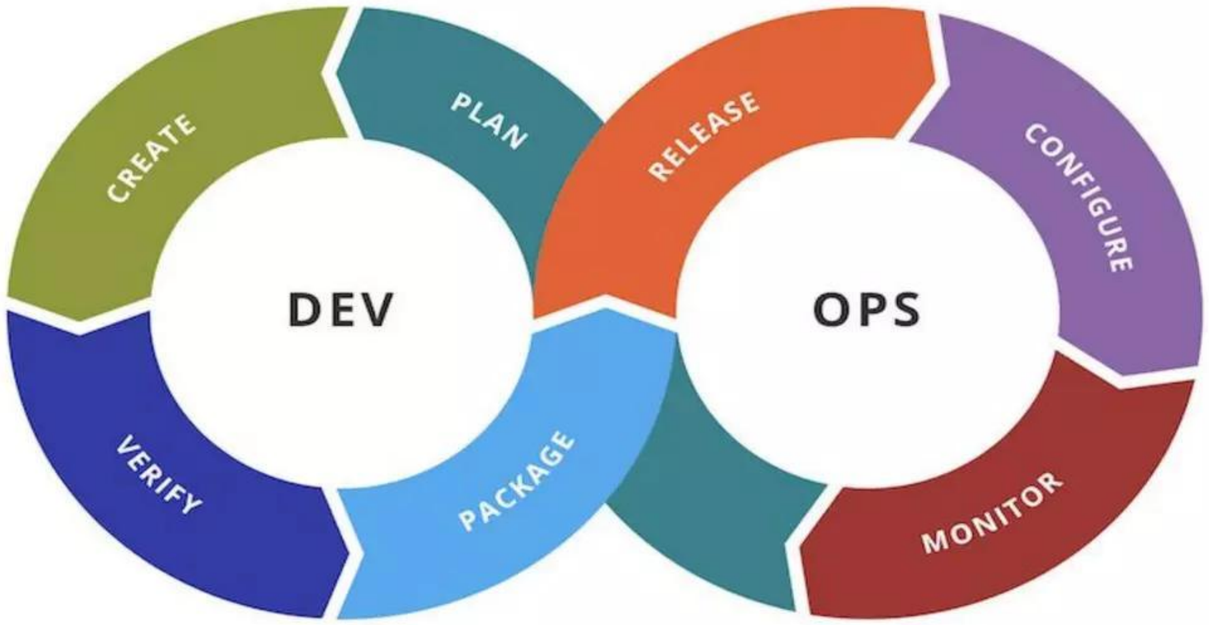
02 **Why** CI/CD?

03 CI/CD **Lifecycle**

04 Continuous **Delivery** vs Continuous **Deployment**

05 Implementing CI/CD with **Jenkins**

What is CI/CD?



CONTINUOUS INTEGRATION

- A practise where developers integrate their code into a common repository, preferably several times a day
- A series of scripts is run automatically to verify the the changes that are pushed

CONTINUOUS DEPLOYMENT/DELIVERY

- A process that have to happen after code is integrated for app changes to be delivered to users.

Advantage: Both the process are used for automating the building and deploying process.

What is CI/CD?

Phases

CI

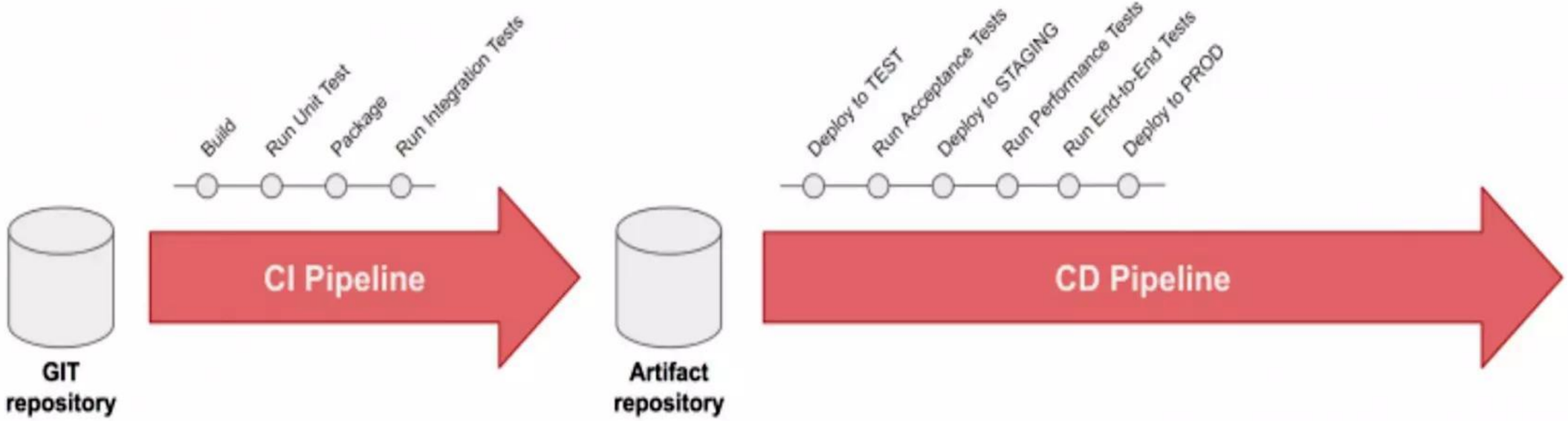
- Push the code to a **VCS**
- The **build server** checks the code as soon as it is pushed
- Devs gets the **feedback** (passed/failed)
- Code get **packaged** and stored in a **repository**

CD

- Ensure that the software can be released reliably
- Deployments are quick and often
- Helps in automated deployment

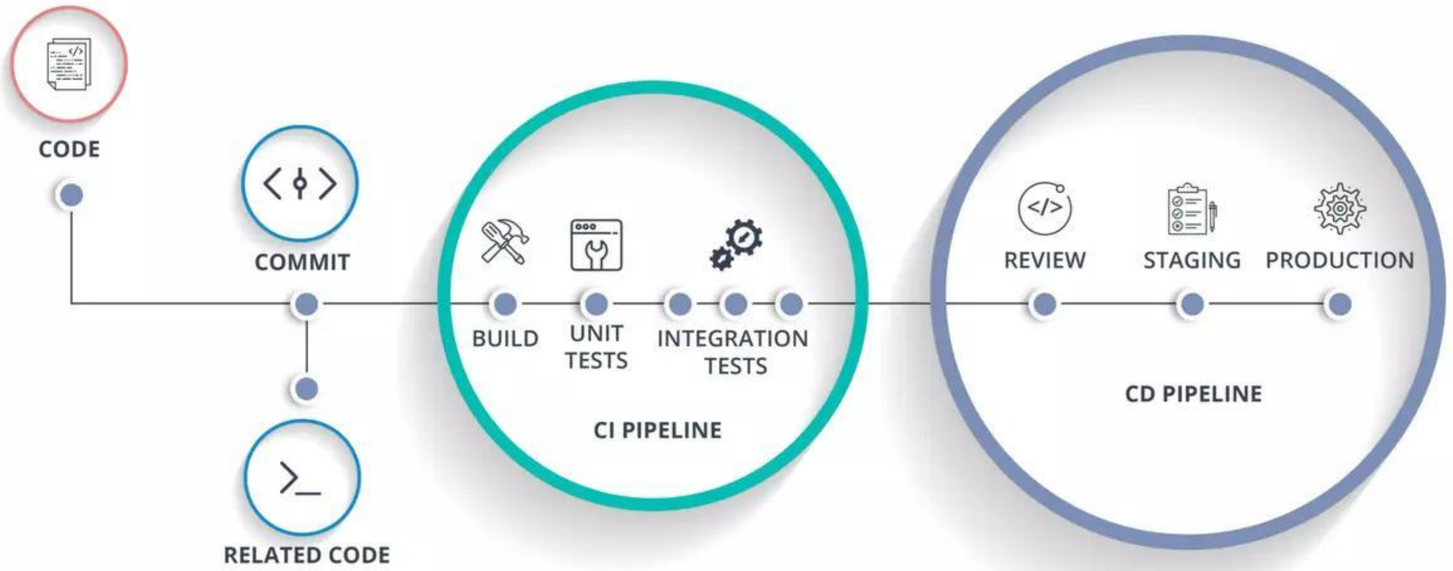
Tools: **Huge List** but will we go with **Jenkins**

What is CI/CD?


Build
Run Unit Test
Package
Run Integration Tests
CI Pipeline
GIT repository
Artifact repository
Deploy to TEST
Run Acceptance Tests
Deploy to STAGING
Run Performance Tests
Run End-to-End Tests
Deploy to PROD
CD Pipeline

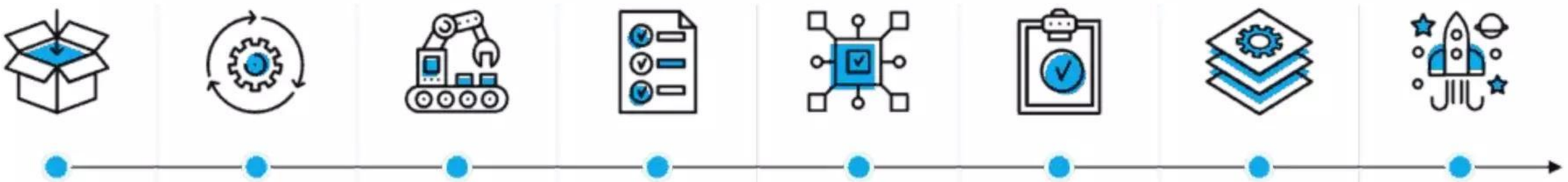
Why CI/CD?

- **Smaller Code** Changes
- **Continuous** Testing
- Early **Fault Detections**
- Faster **Release Rate**
- Smaller **Backlog**
- **Customer Satisfaction**
- **Easy Maintenance** and **Updates**



CI/CD Lifecycle

CI/CD Pipeline



Continuous Delivery v/s Continuous Deployment

Continuous Delivery

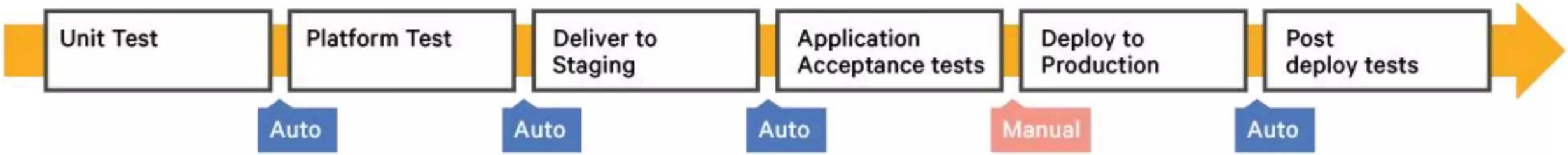
- Ability to deploy often using automation
- Involves a manual step to “approve” a deployment
- Deployment is still automated and repeated

Continuous Deployment

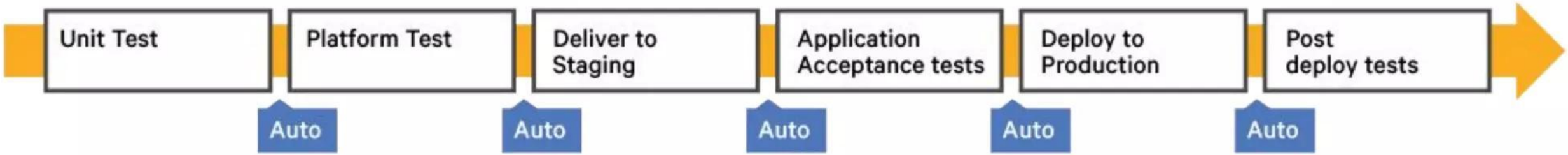
- Full automation
- Code Changes deployed all the way to Production
- No manual intervention of approvals

Continuous Delivery v/s Continuous Deployment

Continuous Delivery



Continuous Deployment



CI & CD pipelines using Jenkins

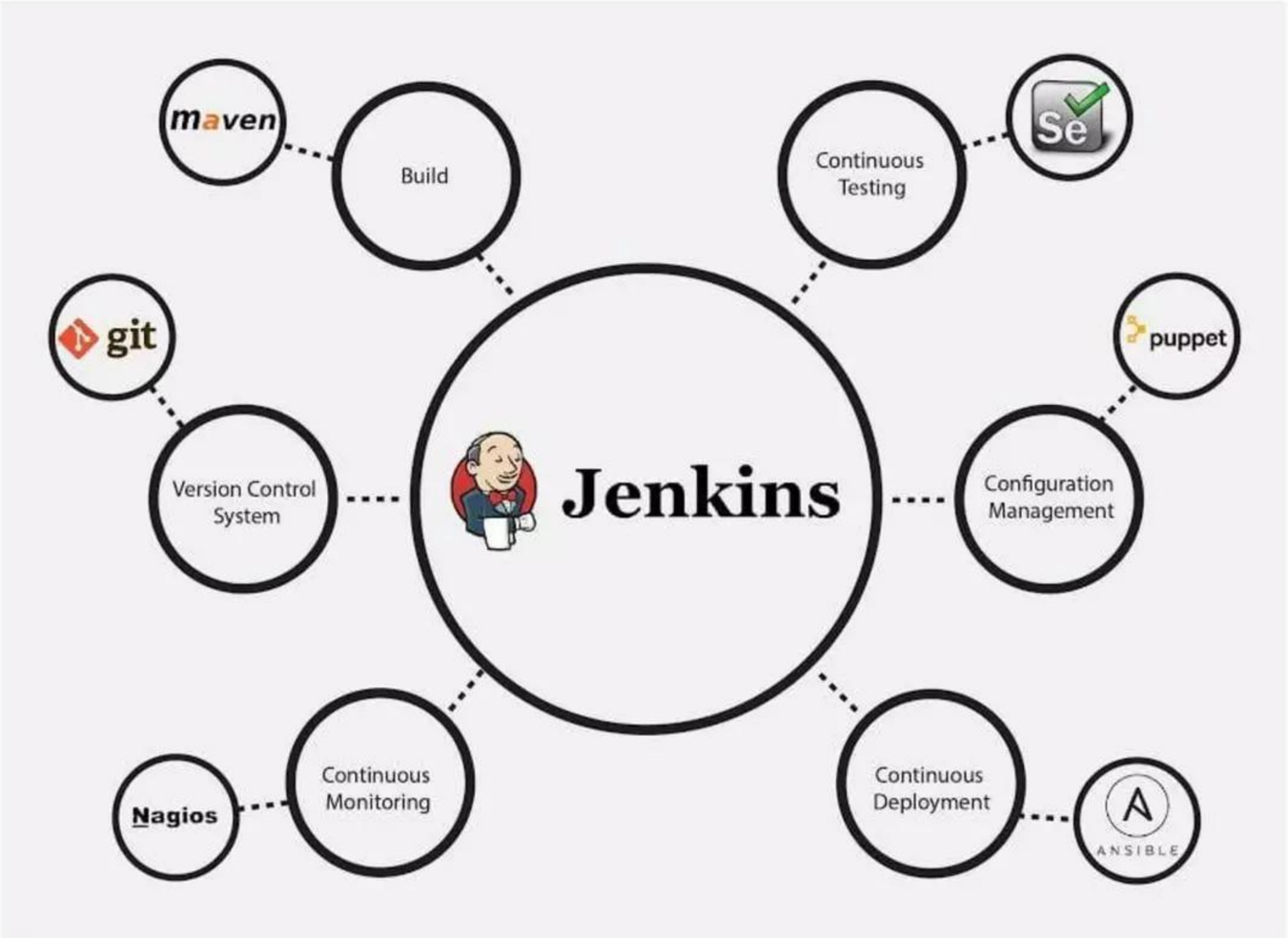
- What is Jenkins
- Why Jenkins
- Installation
- Sample Freestyle Project

CI & CD pipelines using Jenkins

What is Jenkins

- The leading open source automation server.
- Jenkins provides hundreds of plugins to support building, deploying and automating any project.
- Enables developers around the world to reliably build, test, and deploy their software.
- Written in Java

CI & CD pipelines using Jenkins



CI & CD pipelines using Jenkins

Jenkins Installation

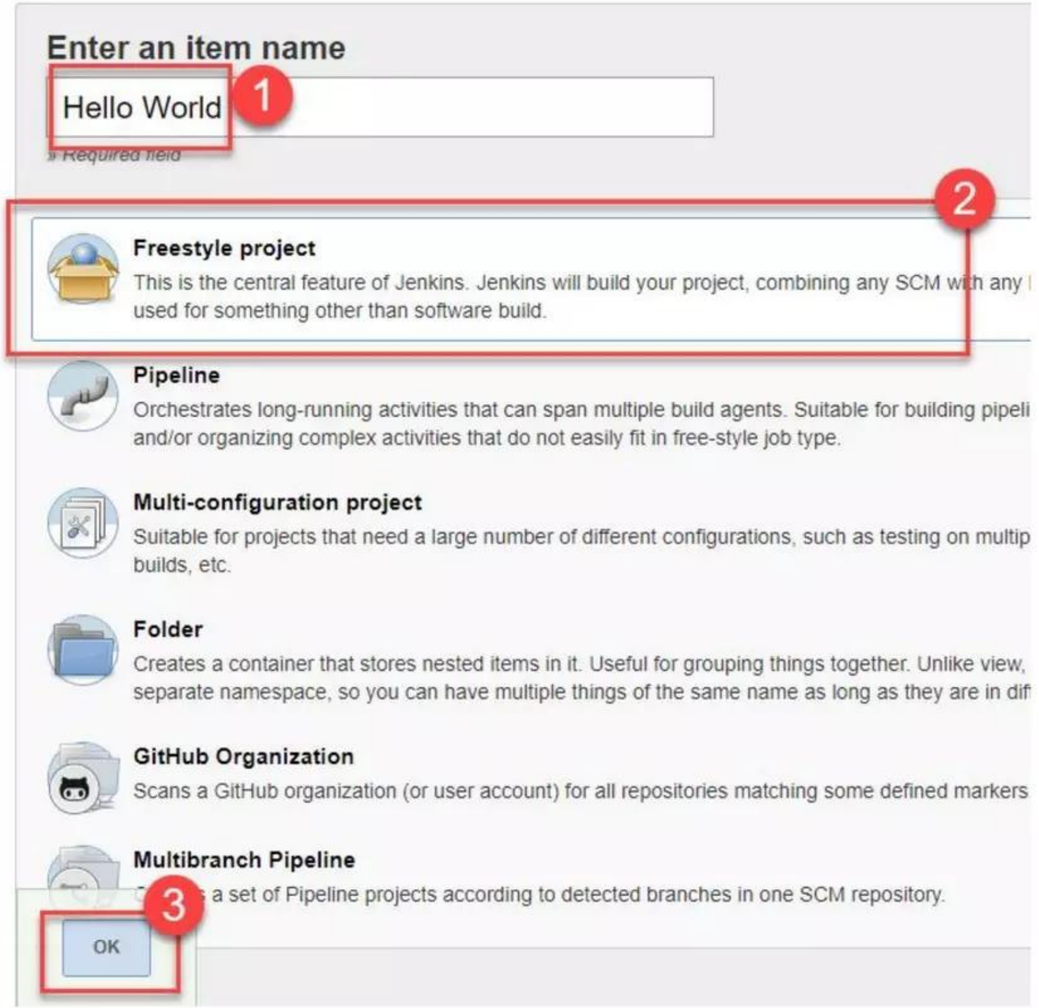
Step1: Install Java

Step2: Install Jenkins

[Jenkins Linux Installation]

CI & CD pipelines using Jenkins

Sample Jenkins Freestyle Project



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Thank You!