

Jenkins – CI/CD Automation Tool 🚀

Jenkins is an **open-source automation server** used for **Continuous Integration (CI) and Continuous Deployment (CD)**. It automates software development processes like **building, testing, and deploying applications**.

♦ Why Jenkins?

- ✓ **Automates Build & Deployment** – Reduces manual effort
- ✓ **Integrates with Docker & Kubernetes** – For containerized deployments
- ✓ **Pipeline Support** – Automates entire CI/CD workflows
- ✓ **Plugin Support** – 1,000+ plugins for Git, Maven, Docker, etc.
- ✓ **Open-Source & Extensible** – Free to use and highly customizable

How Jenkins Works (CI/CD Flow)

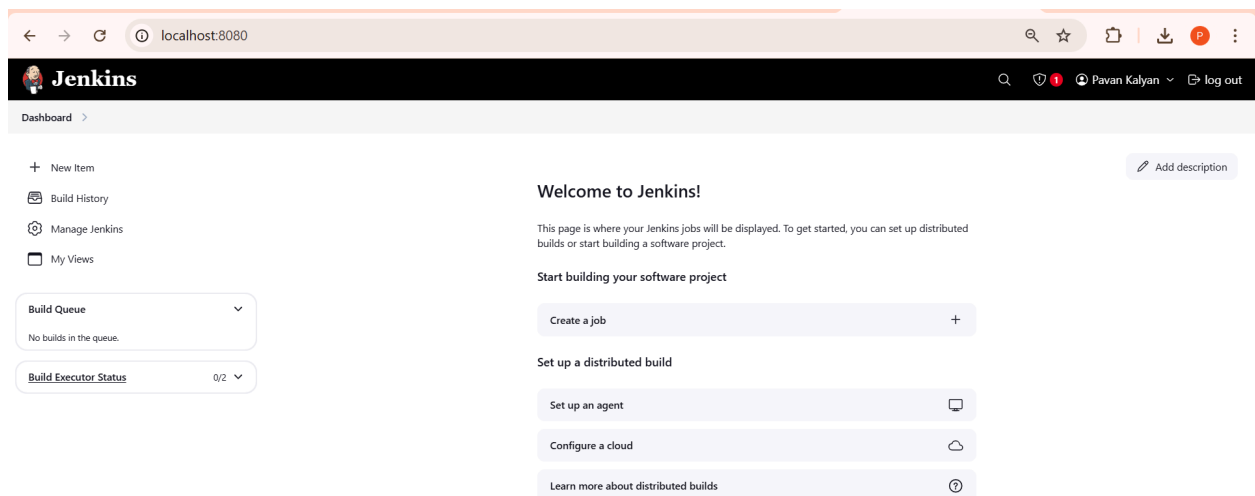
- 1 Developer pushes code to GitHub/GitLab
- 2 Jenkins detects the change & pulls the code
- 3 Jenkins builds the project (e.g., using Maven/Gradle)
- 4 Jenkins runs tests (JUnit, Selenium, etc.)
- 5 If successful, Jenkins packages the app (e.g., JAR, WAR,

Docker Image)

6 Jenkins deploys the app (to a server, Docker, or Kubernetes)

Use case of jenkins

- **Automating Builds** using Maven or Gradle.
- **Running Unit and Integration Tests** automatically.
- **Deploying Applications** to cloud platforms like AWS, Azure, or Kubernetes.
- **Monitoring Code Quality** with tools like SonarQube.
- **Containerization** by integrating with Docker and Kubernetes.



After installation of jenkins ..this is the one default page

<https://www.youtube.com/watch?v=Zdxko2bPAAw>

Refer this link to install and set up

The image shows two screenshots of the Jenkins web interface. The top screenshot is the login page at `localhost:8080/login?from=%2F`. It features the Jenkins logo on the left and a 'Sign in to Jenkins' form on the right. The form includes fields for 'Username' (containing 'PavanPrem') and 'Password' (masked with dots), a 'Keep me signed in' checkbox, and a 'Sign in' button.

The bottom screenshot is the Jenkins dashboard. The top navigation bar shows the Jenkins logo, a search icon, a shield icon, a user profile 'Pavan Kalyan', and a 'log out' button. The main content area has a left sidebar with links: 'New Item', 'Build History', 'Manage Jenkins', and 'My Views'. The 'Build Queue' section shows 'No builds in the queue.' and the 'Build Executor Status' shows '0/2'. The main table lists builds with columns for status, name, last success, last failure, and last duration.

S	W	Name	Last Success	Last Failure	Last Duration
...	☀	SpringBoot-Docker	N/A	N/A	N/A
✓	☁	SpringBootJenkins	1 day 16 hr #24	1 day 17 hr #22	23 sec

Whatever the changes we had made in the github those will reflect in the jenkins...