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
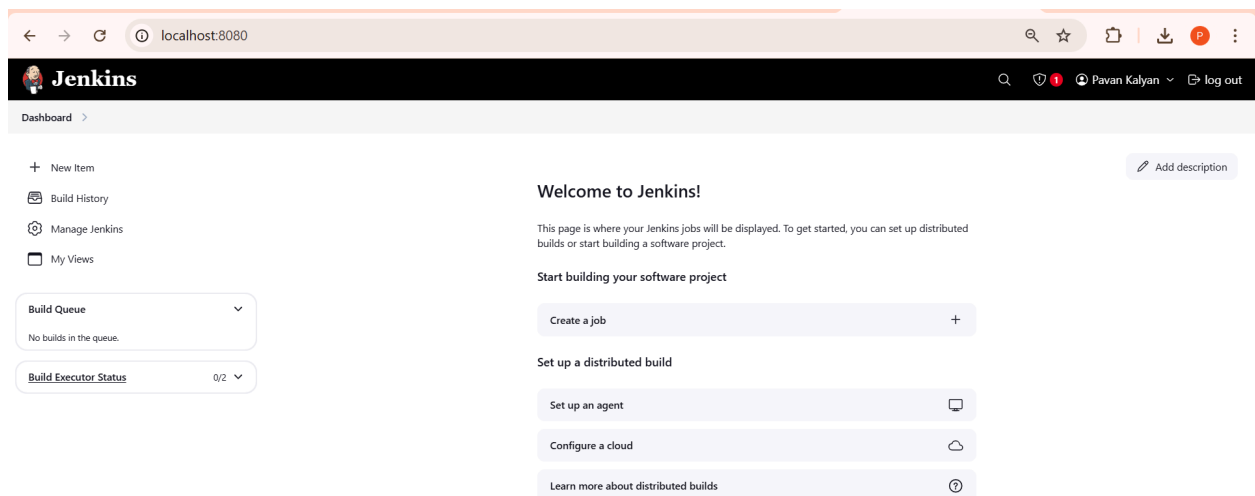
How Jenkins Works (CI/CD Flow)

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

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