

# Jenkins CI/CD



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# Content

- ◆ What is Jenkins?
- ◆ Why choose Jenkins?
- ◆ CI/CD
- ◆ Jenkins' Terminologies
- ◆ In Practice



# What is Jenkins?

- ◆ Jenkins is a self-contained, open source automation server
- ◆ It can be used to automate all sorts of tasks related to building, testing, and delivering or deploying software.
- ◆ Eg. used to manually, periodically, or automatically build software development projects
- ◆ Written in Java but...
- ◆ ... Jenkins is used by teams of all different sizes, for projects with various languages.

# Why choose Jenkins?

- ◆ Great extensibility with plugins
- ◆ Allows developers to perform various types of tests automatically, eg. unit tests and integration tests
- ◆ Jenkins can be integrated with other tools such as GitHub and Docker
- ◆ Support different version control systems
- ◆ Code quality metrics





# CI/CD

- ❖ A set of best practices and automated processes that enable software development teams to deliver code changes more frequently and reliably
  - ❖ Streamlined software development process that is more efficient, reliable, and scalable
  - ❖ Catching issues early and deploying changes frequently, teams can accelerate their development cycles, reduce errors, and improve overall software quality
- regularly integrate code and perform tests to detect issues early



# Continuous Integration

- ◆ Integrating code changes from multiple developers into a central repository frequently
- ◆ Achieved through the use of automated testing and building tools that can detect issues early in the development cycle, reducing the likelihood of bugs and conflicts arising later on



# Continuous Delivery/Deployment

- ◆ Automating the deployment of code changes to production environments as soon as they are ready
- ◆ Helps ensure that new features and bug fixes are delivered to end-users quickly, without delays caused by manual deployment processes





# Jenkins' Terminologies

- ◆ Pipeline = suite of plugins which supports implementing and integrating continuous delivery pipelines into Jenkins
- ◆ Definition of a Jenkins Pipeline is written into a text file (called a Jenkinsfile) which in turn can be committed to a project's source control repository
- ◆ Blue Ocean provides an easy-to-use Pipeline visualization





In Practice

Thanks for your attention!  
Are there questions?

