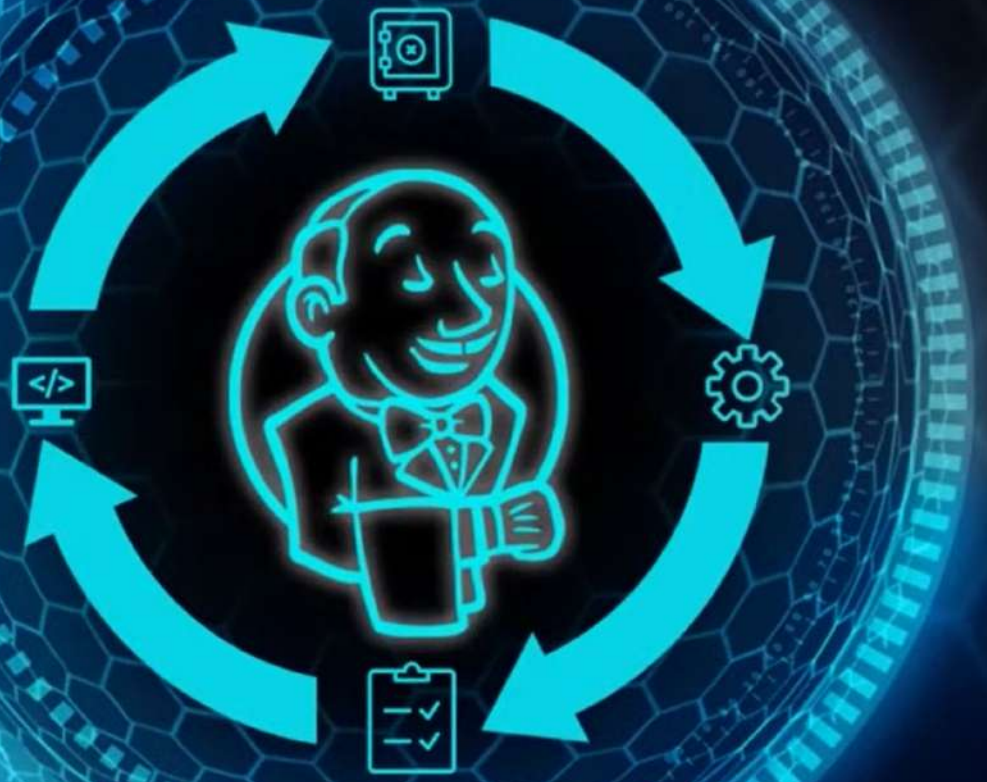
WHAT IS JENKINS?

simplilearn



What's in it for you?

- Before Jenkins
- Issues before Jenkins
- What is Jenkins?
- What is Continuous Integration?

- Continuous Integration Tools
- Features of Jenkins
- Jenkins Architecture
- Jenkins Case Study

Before Jenkins

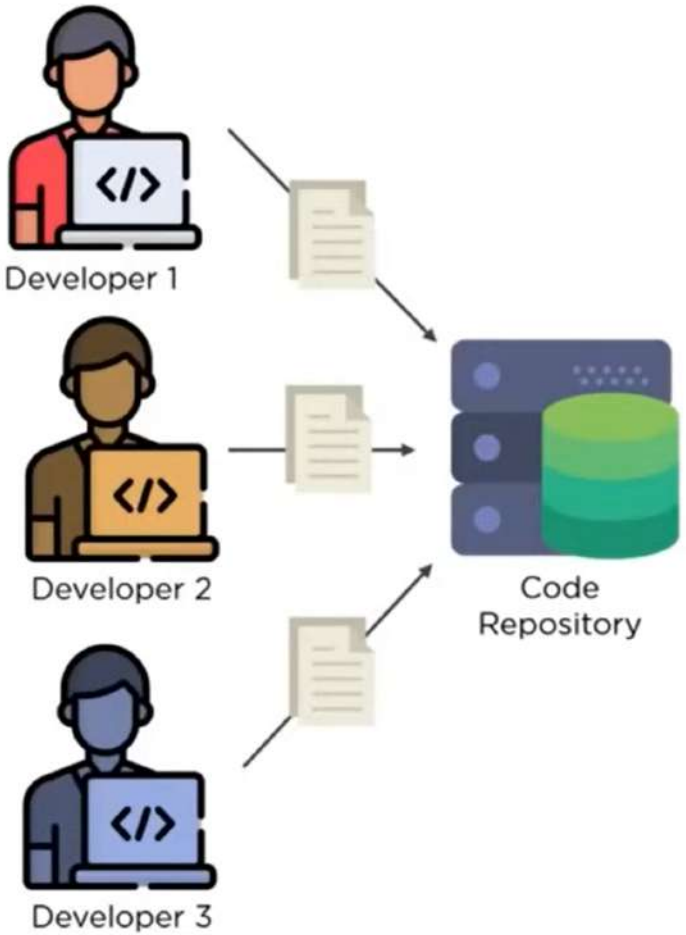
Before Jenkins

Developer 1

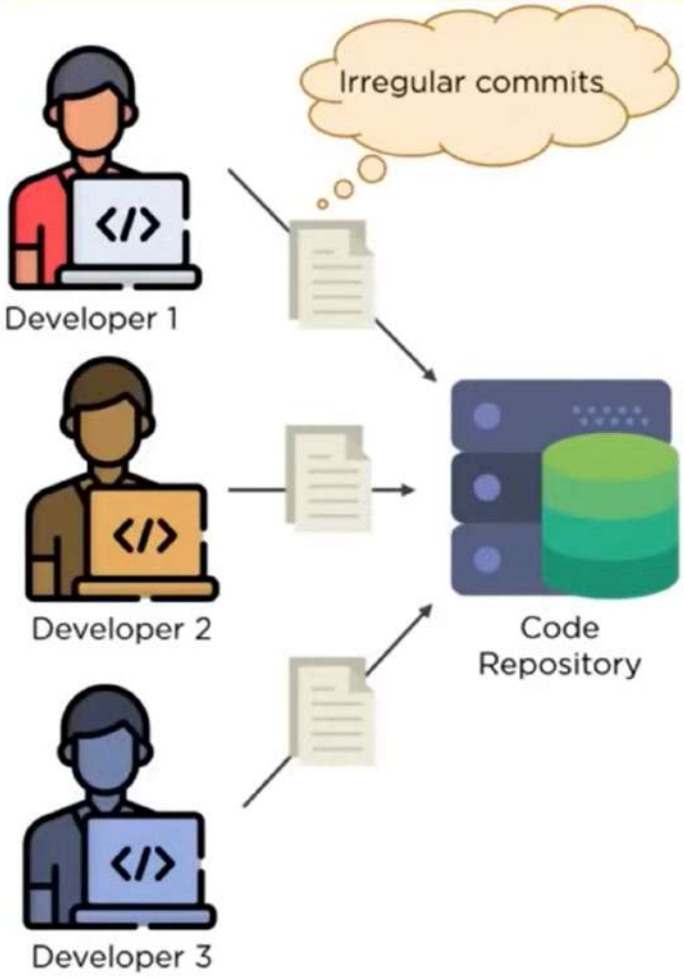
Developer 2

Developer 3

Before Jenkins



Before Jenkins



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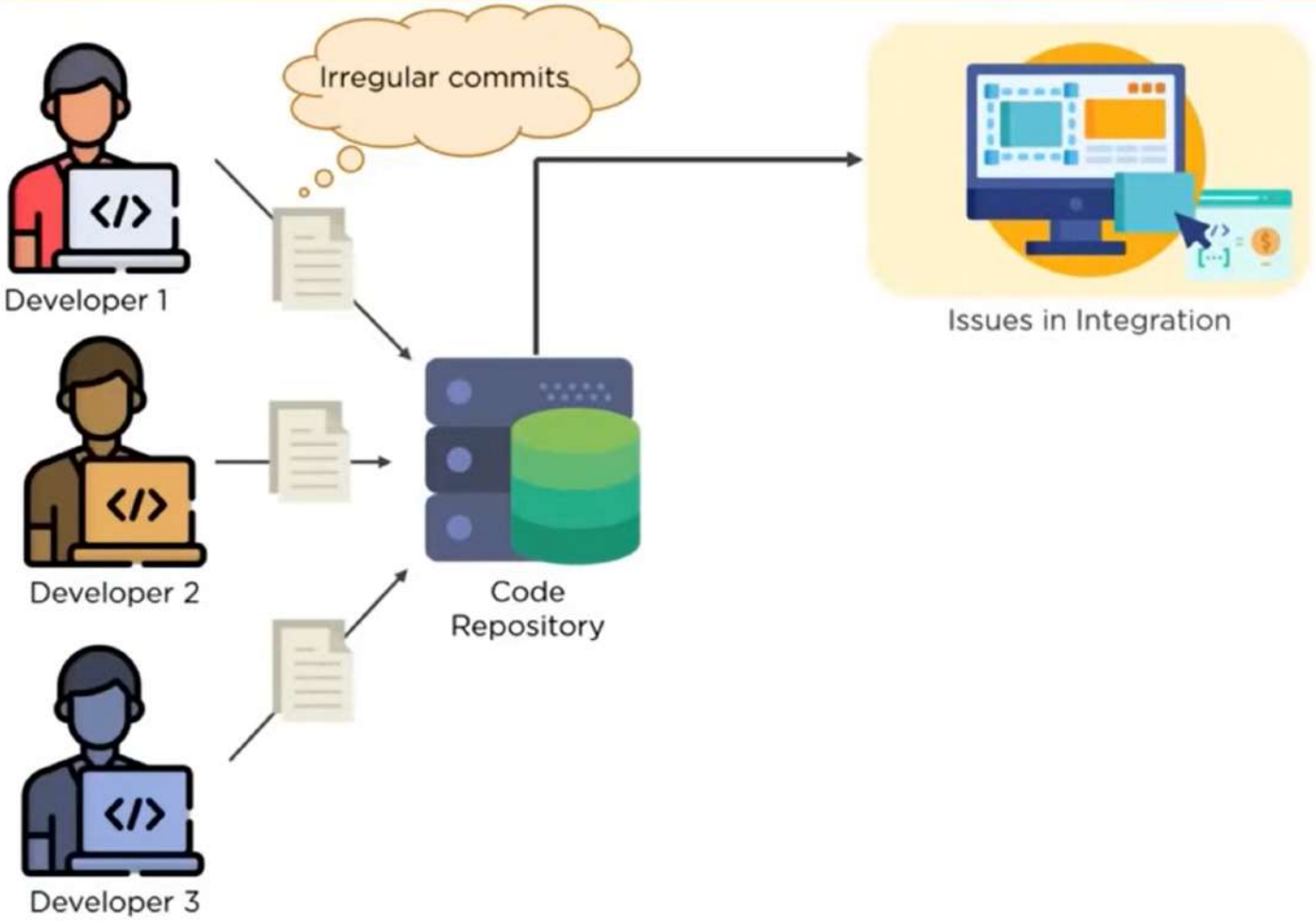
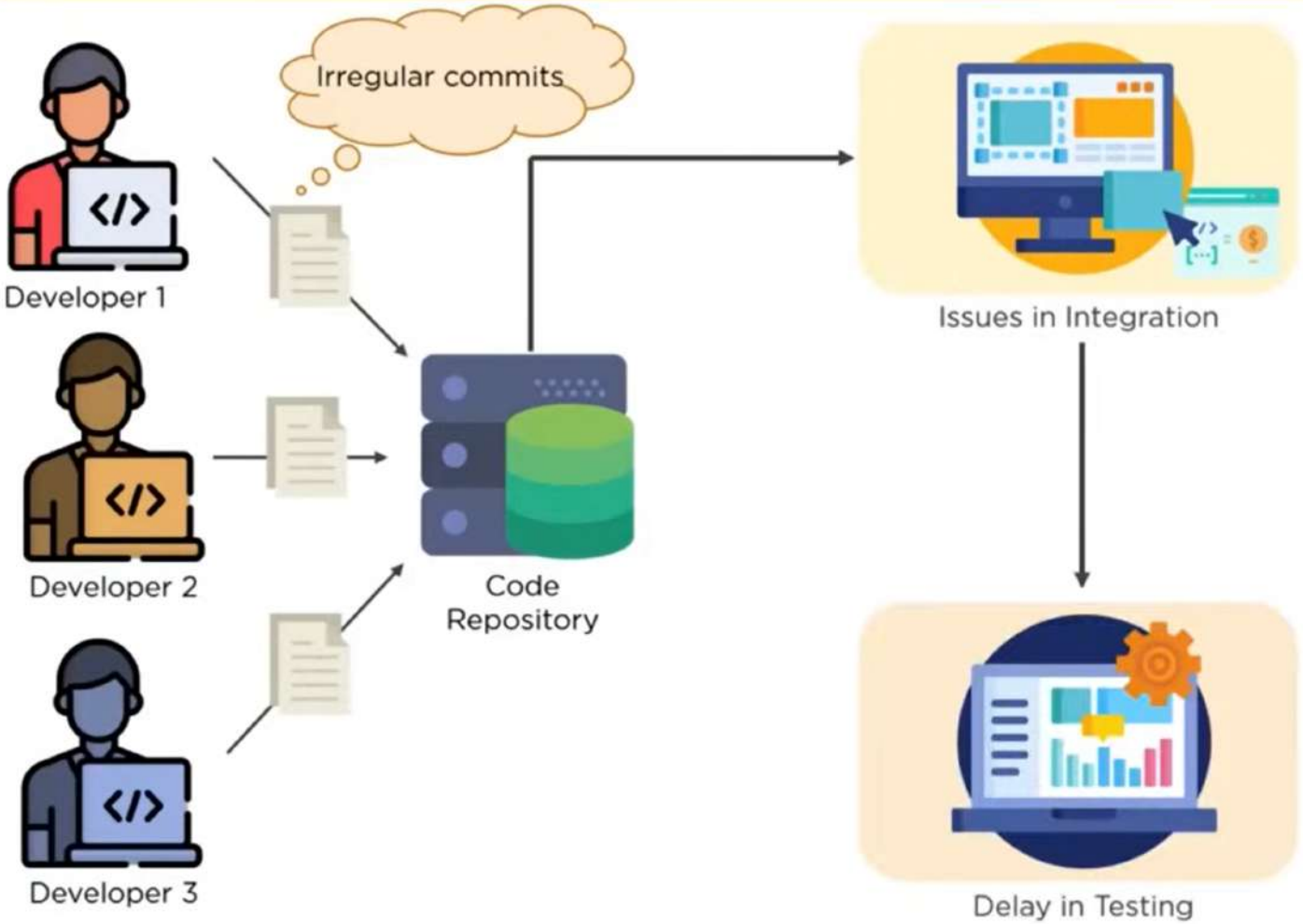
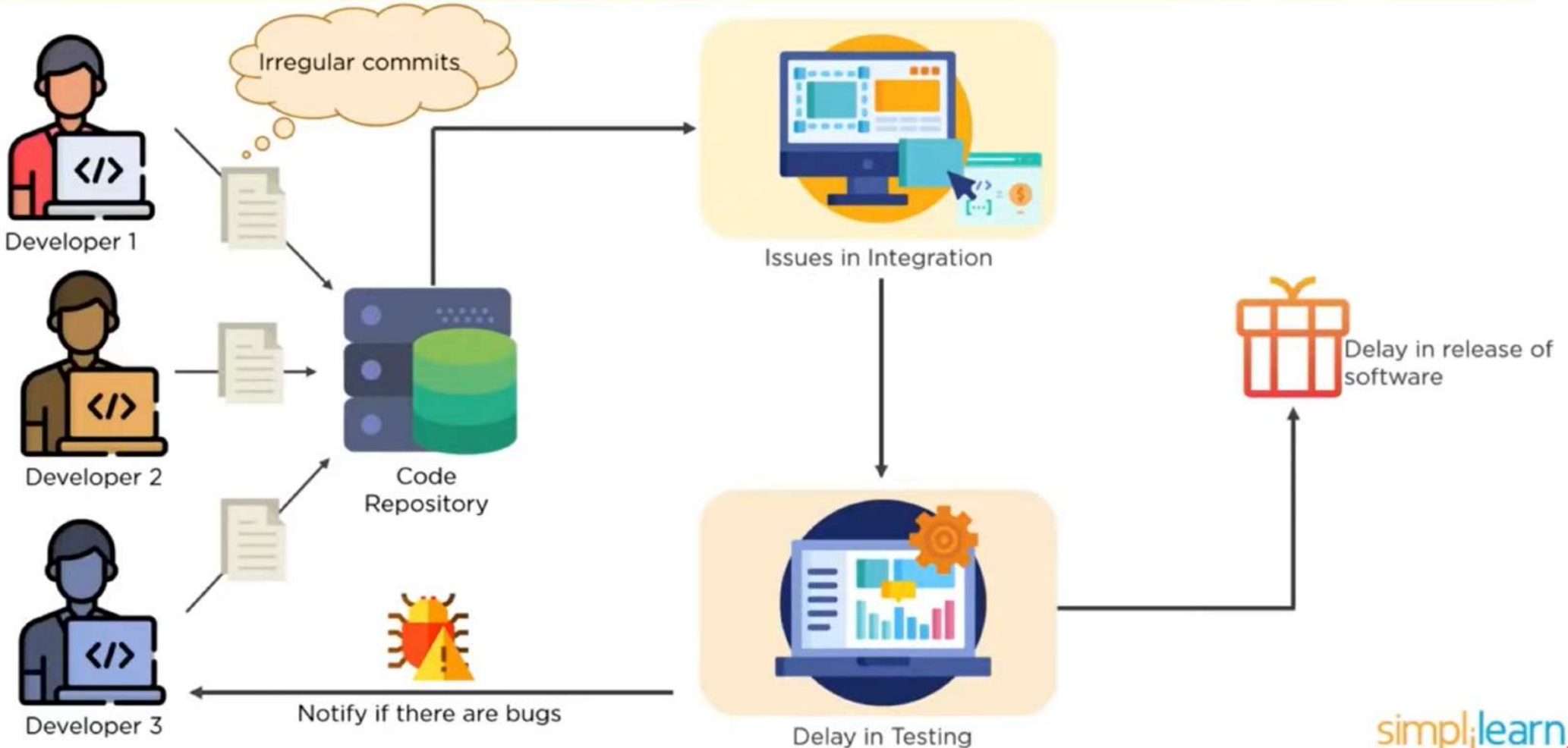


Before Jenkins



Before Jenkins



Before Jenkins

Developer 1

Developer 2

Developer 3

Developers had to wait till the entire software code was built and tested to check for errors

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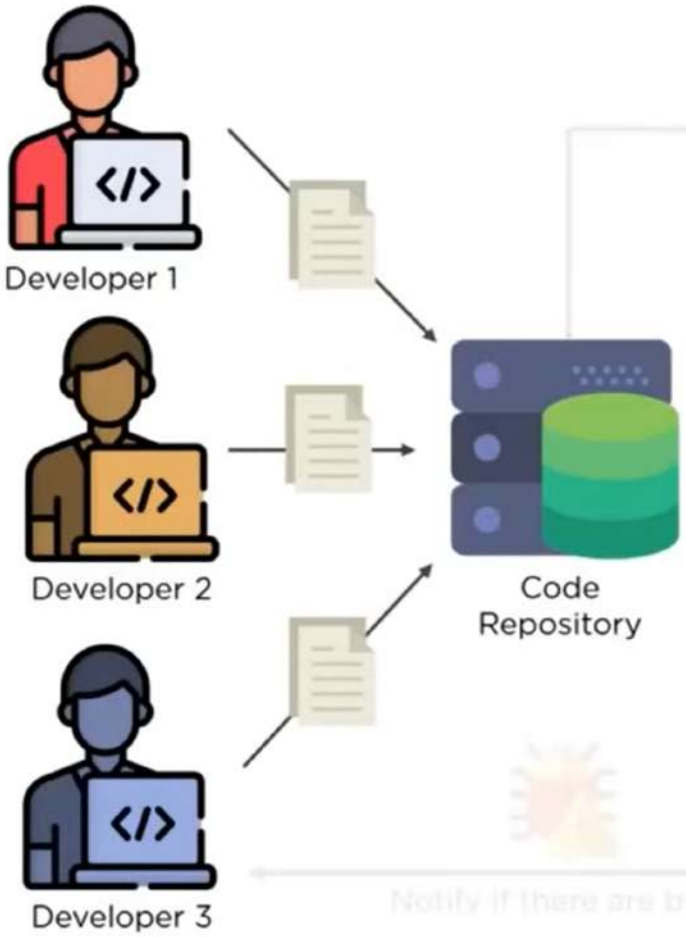
Before Jenkins



There was no iterative improvement of code and software delivery process was slow

What is Jenkins?

What is Jenkins?

Jenkins is a Continuous Integration tool that allows continuous development, test and deployment of newly created codes

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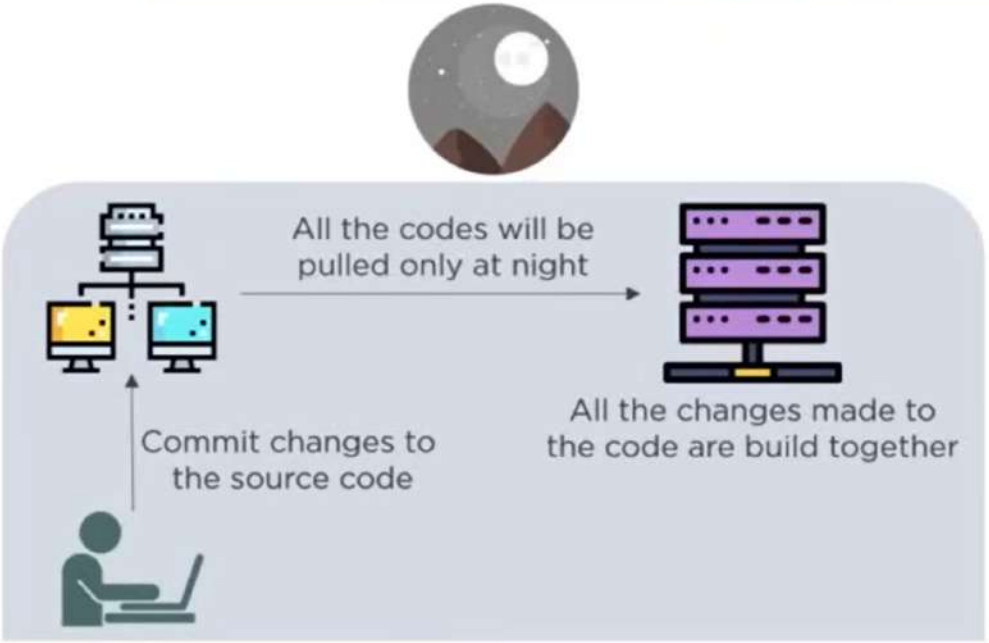


What is Jenkins?

Jenkins is a Continuous Integration tool that allows continuous development, test and deployment of newly created codes

All the codes will be pulled only at night

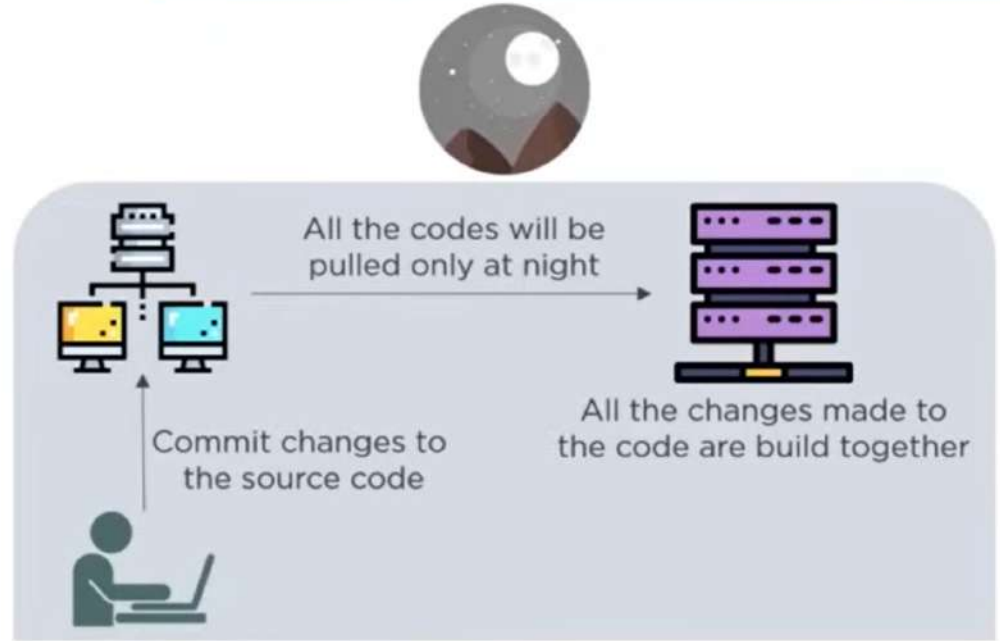
All the changes made to the code are build together

Commit changes to the source code

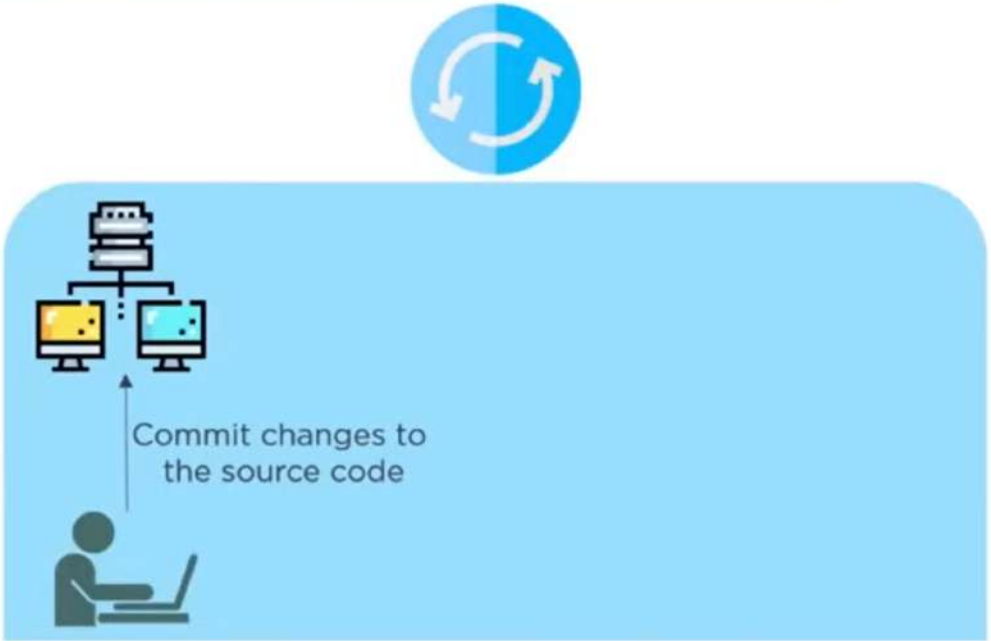
Nightly build and integration

What is Jenkins?

Jenkins is a Continuous Integration tool that allows continuous development, test and deployment of newly created codes



Nightly build and integration



What is Jenkins?

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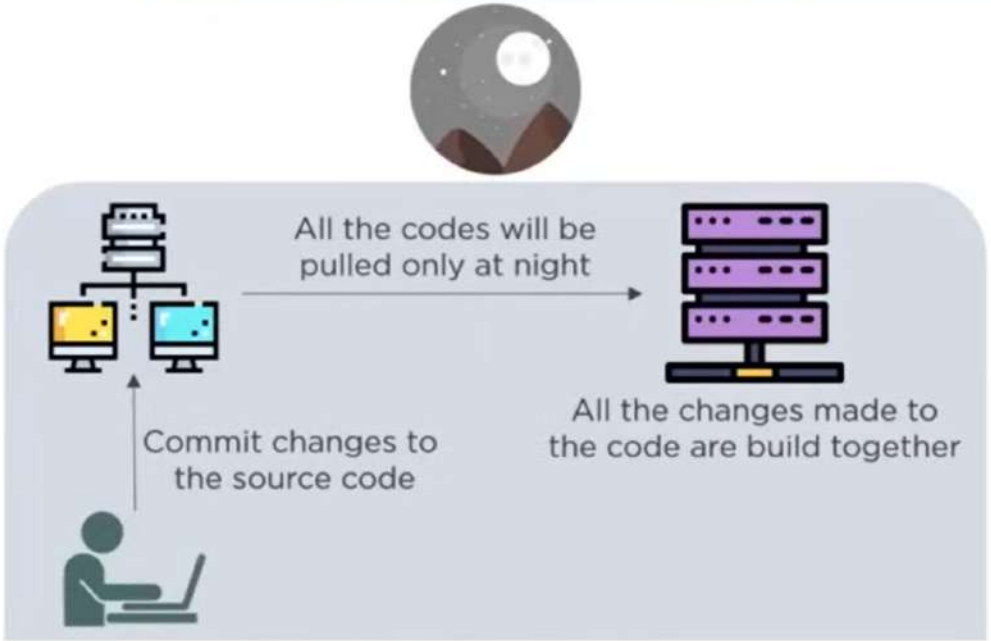
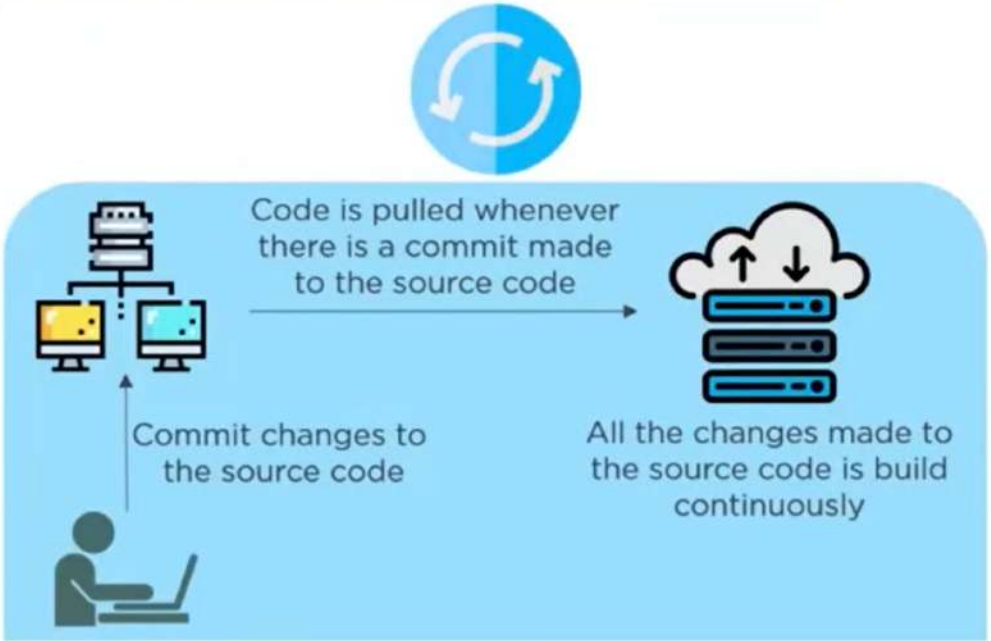


Nightly build and integration



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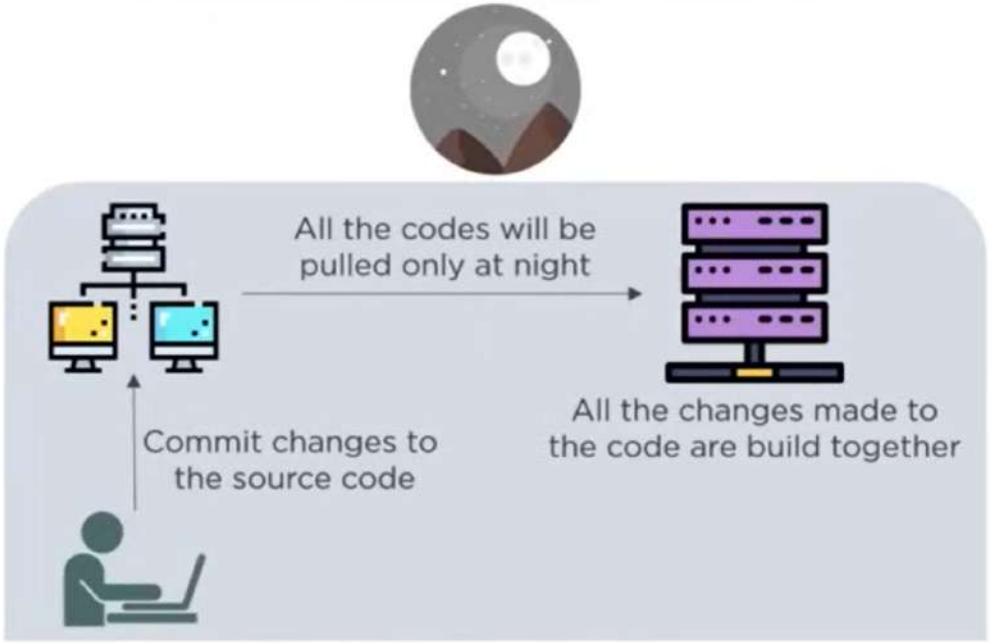
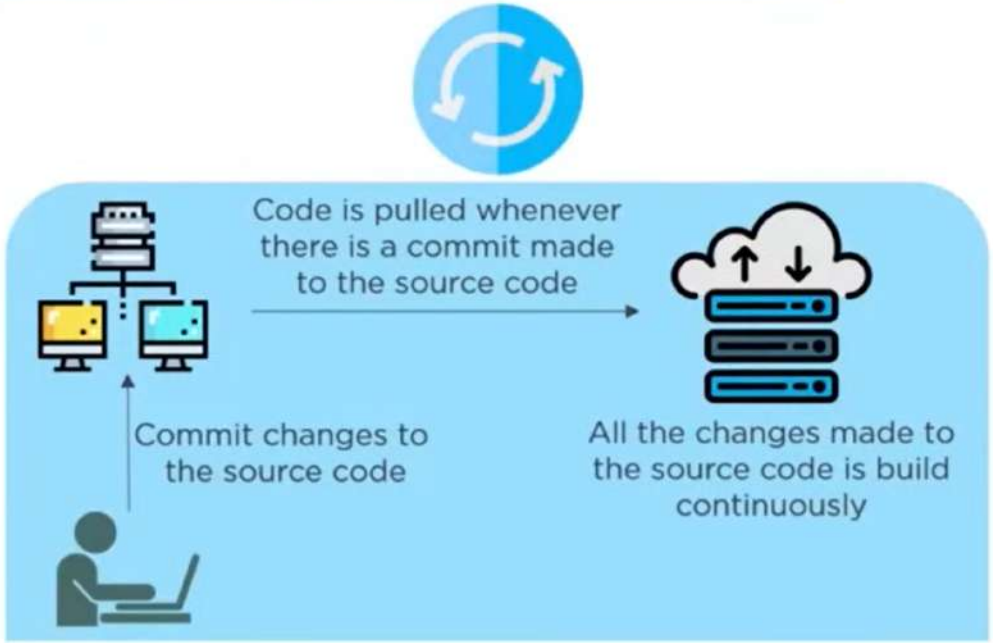


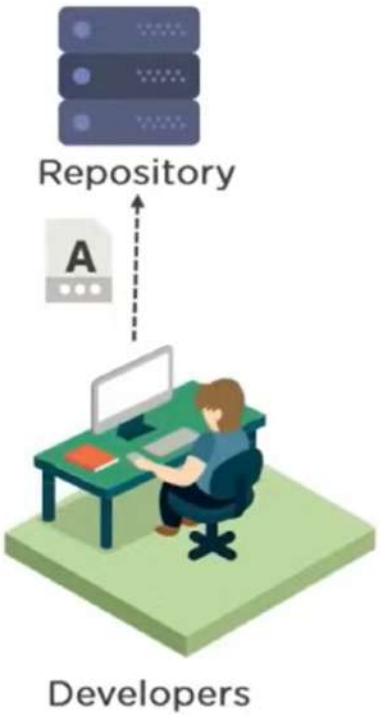
Nightly build and integration



Continuous build and Integration


What is Continuous Integration?
simplilearn

What is Continuous Integration?



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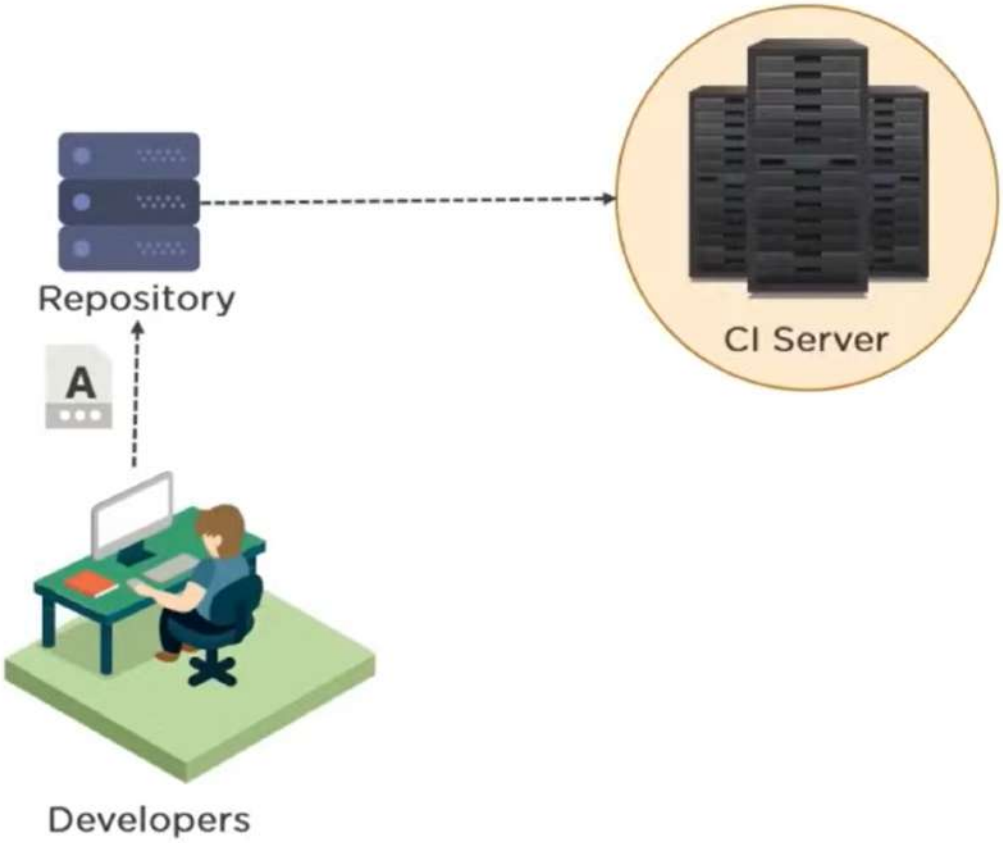

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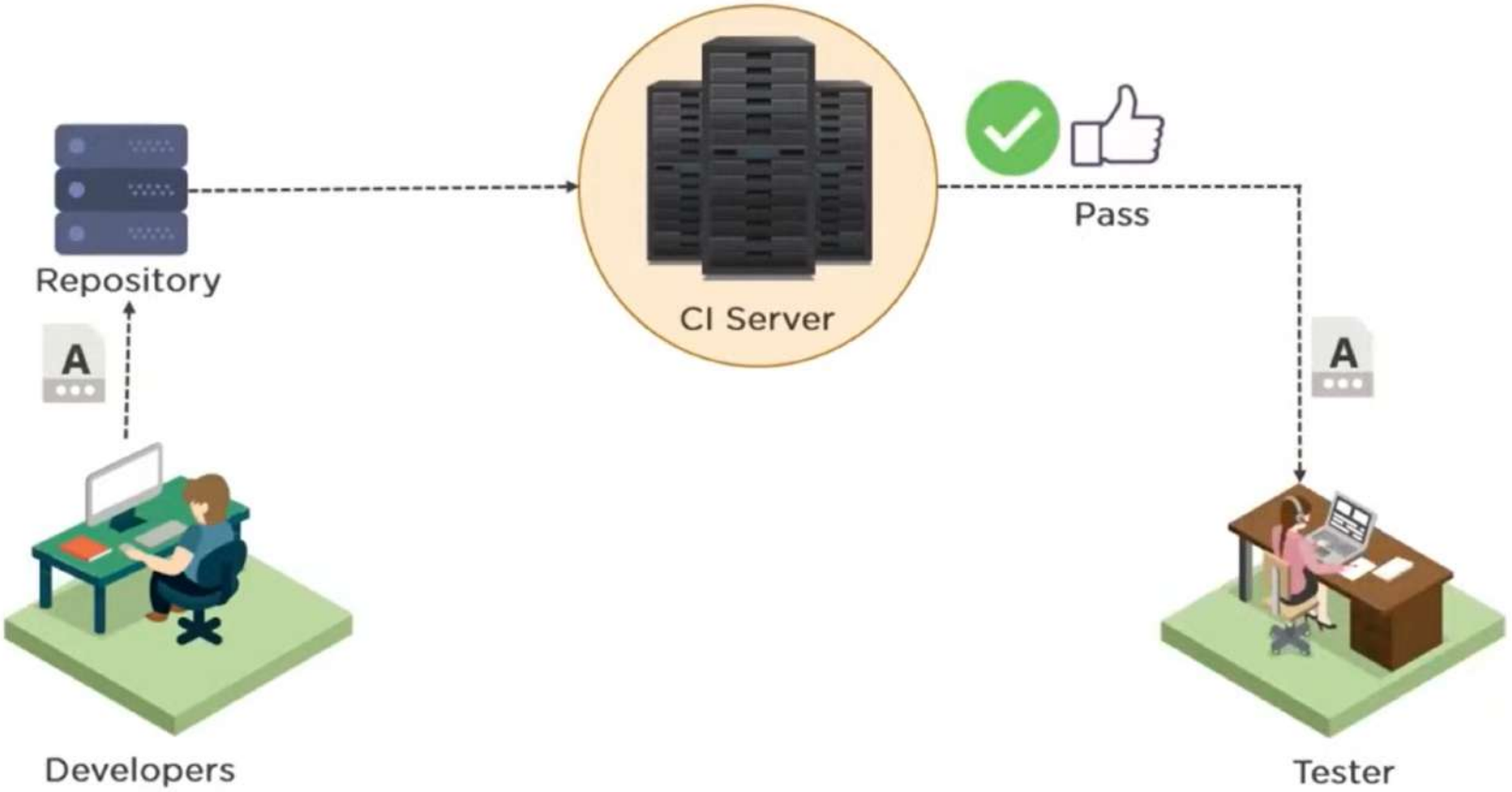

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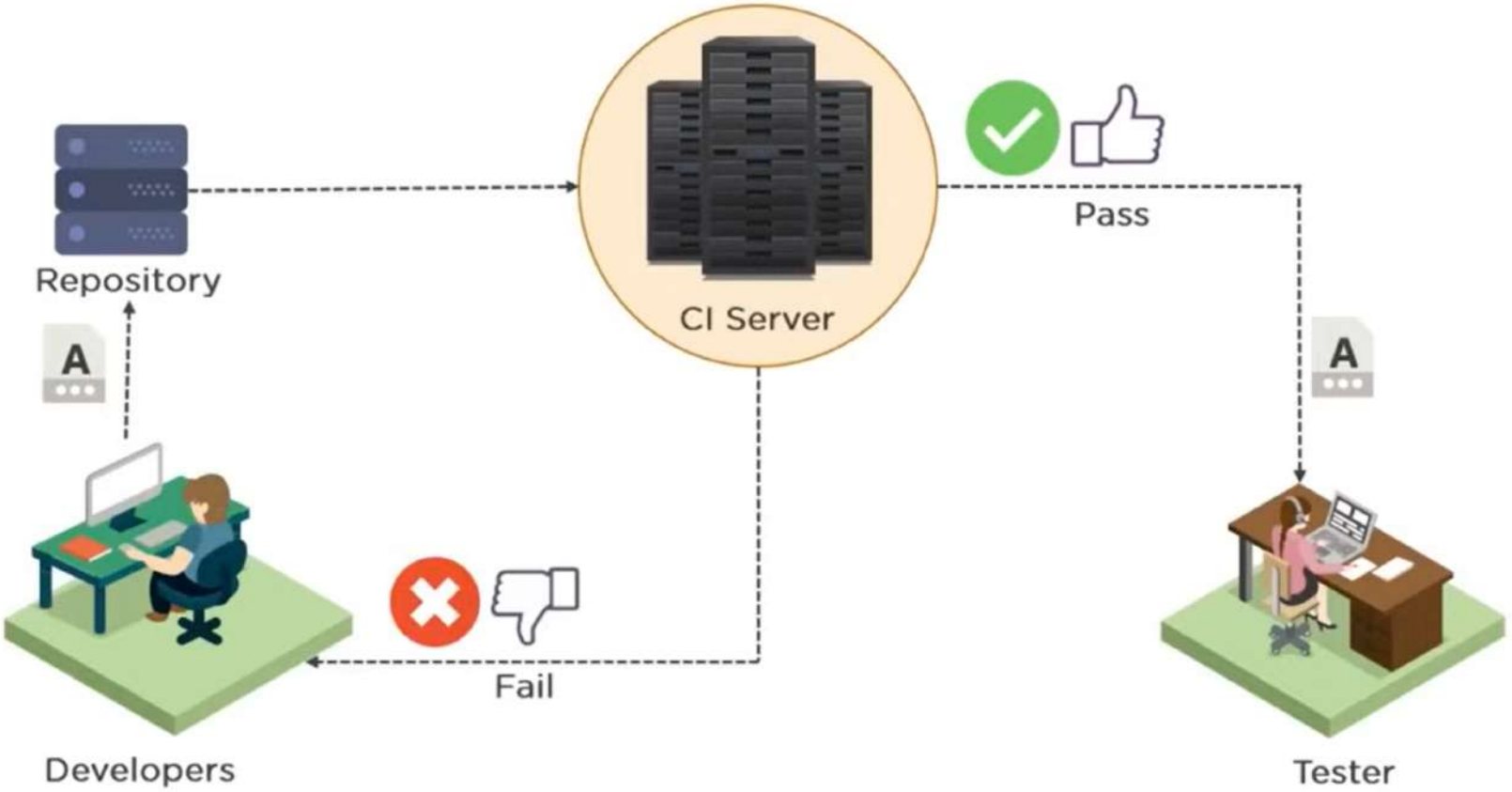

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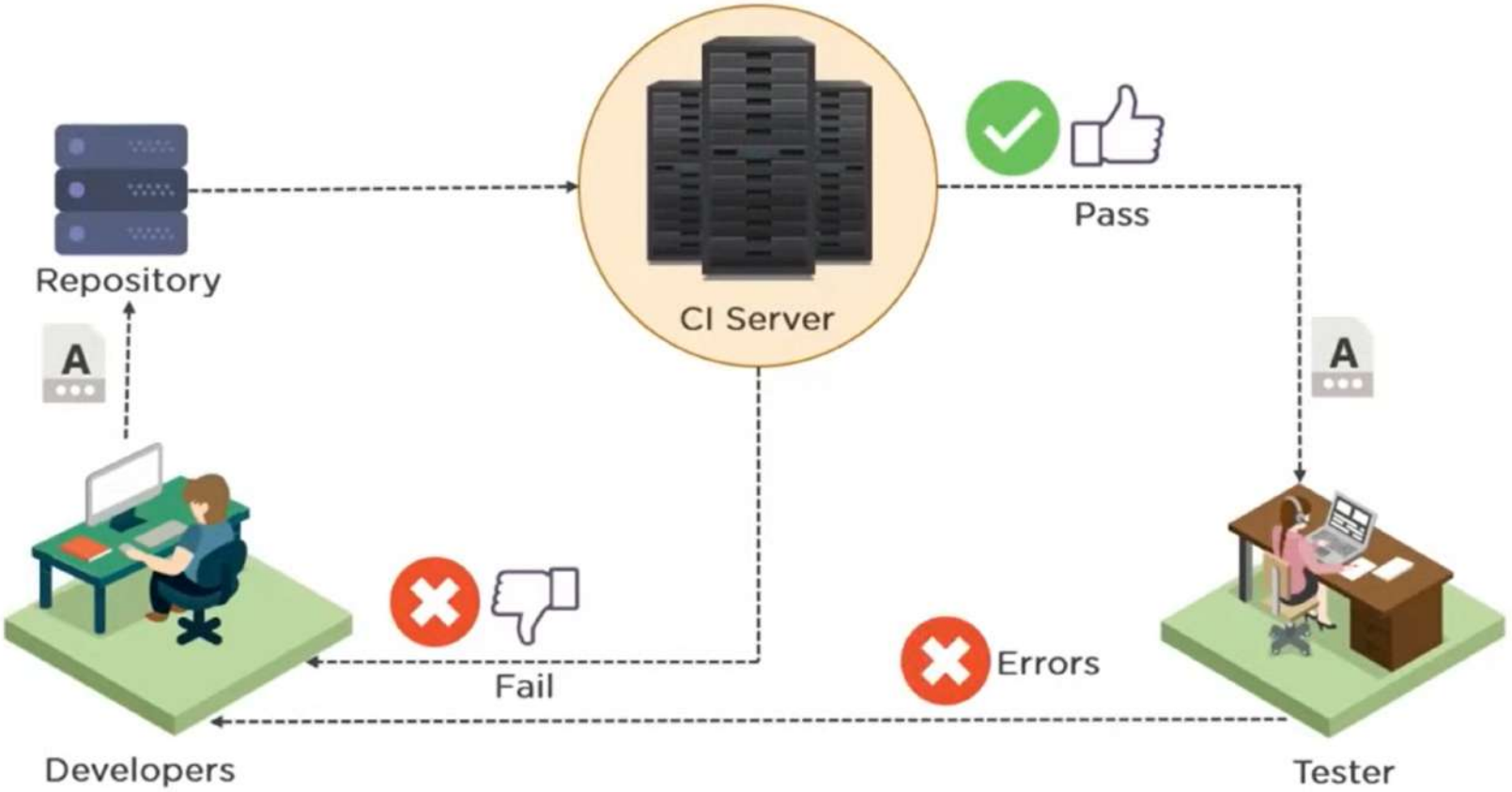
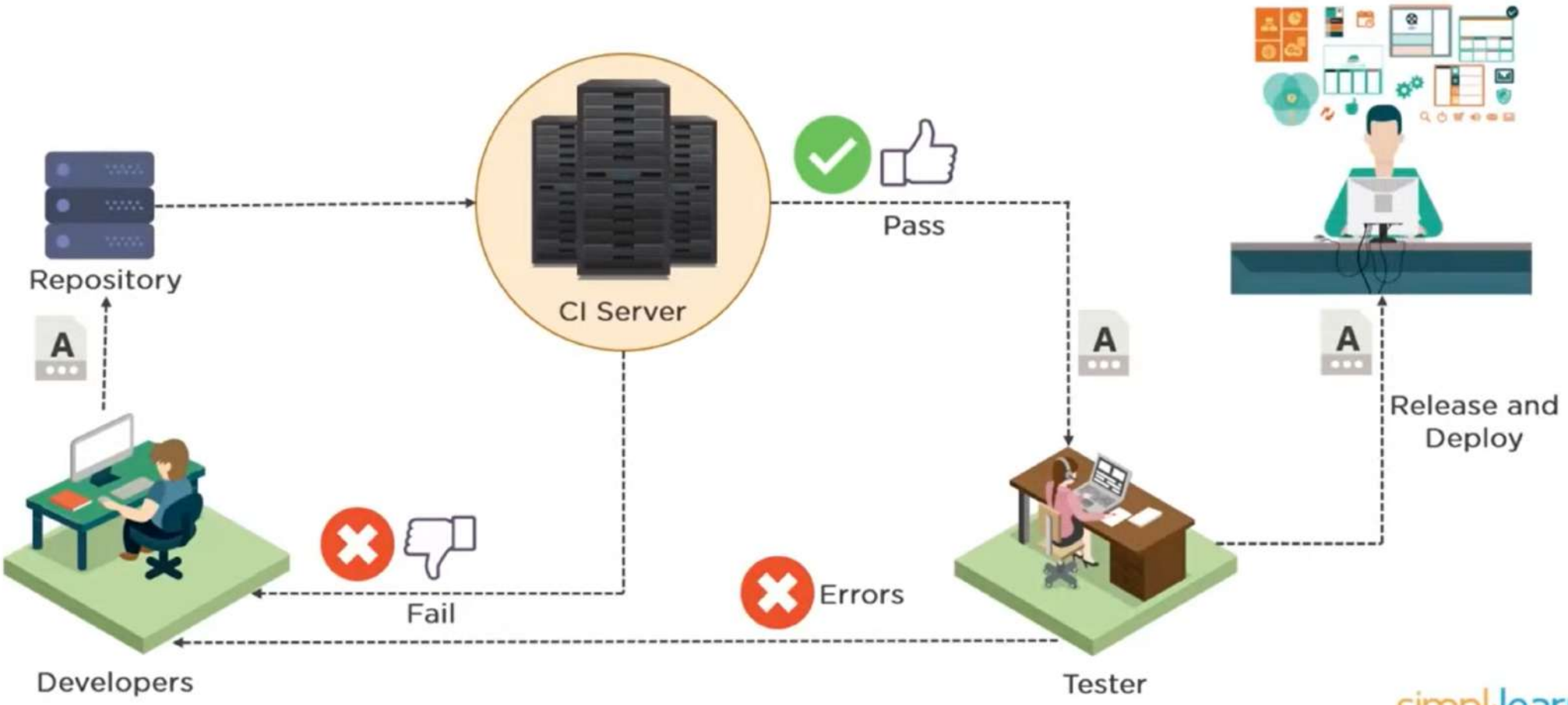
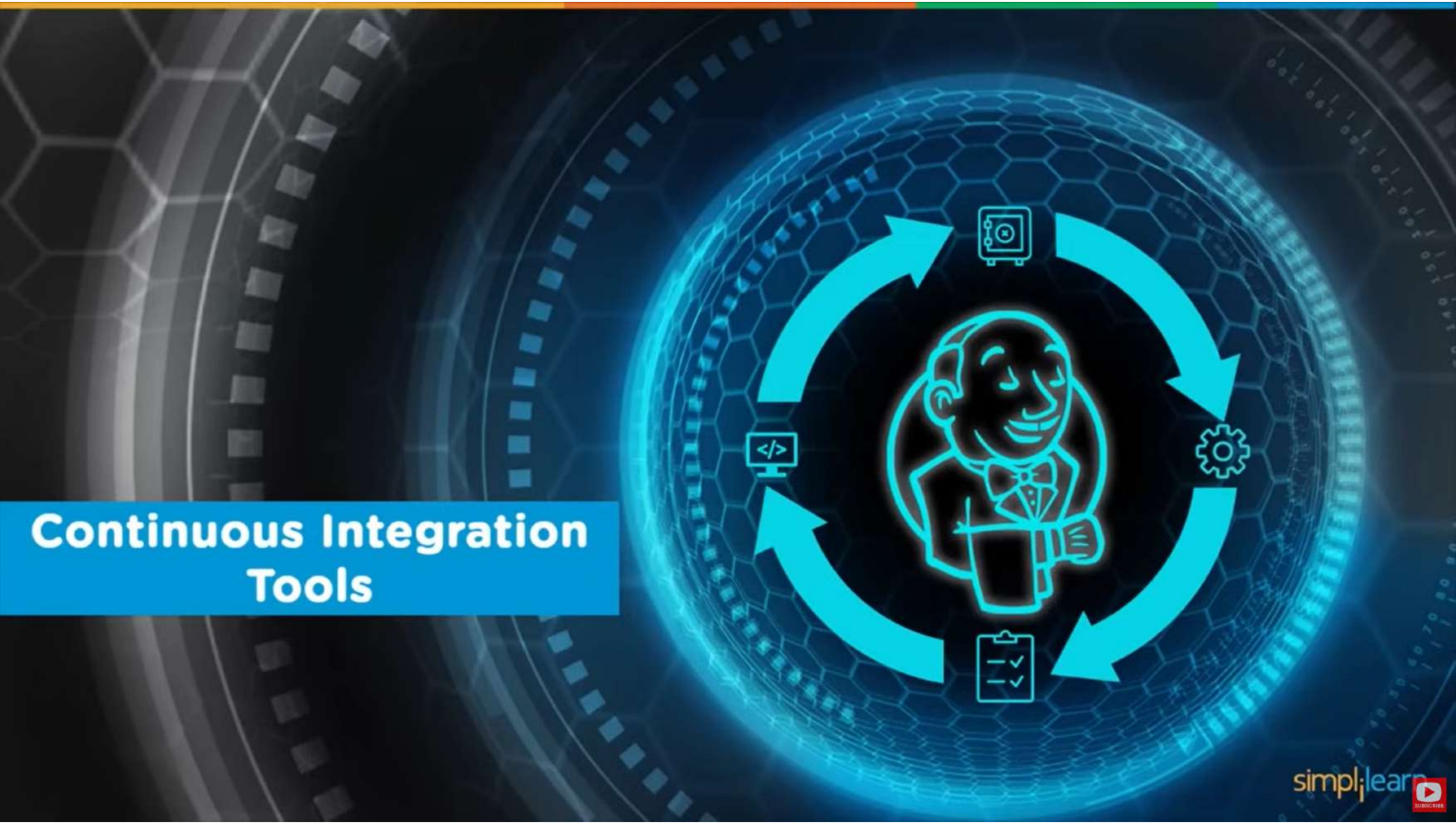
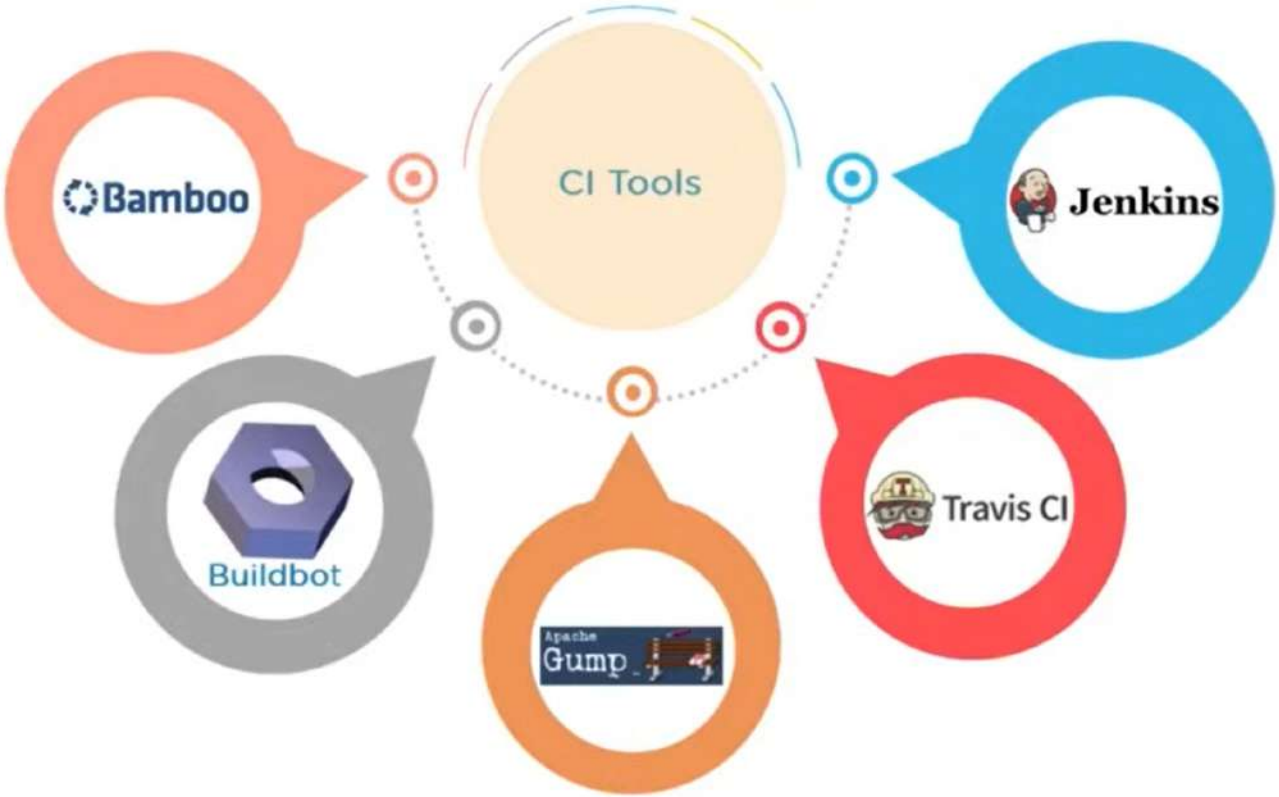


What is Continuous Integration?




Continuous Integration
Tools
simplilearn

Continuous Integration Tools



Continuous Integration Tools

Bamboo is a CI tool that can run multiple builds in parallel for faster compilation. It has built in functionality to connect with repositories and has build tasks for Ant, Maven, etc.

Continuous Integration Tools

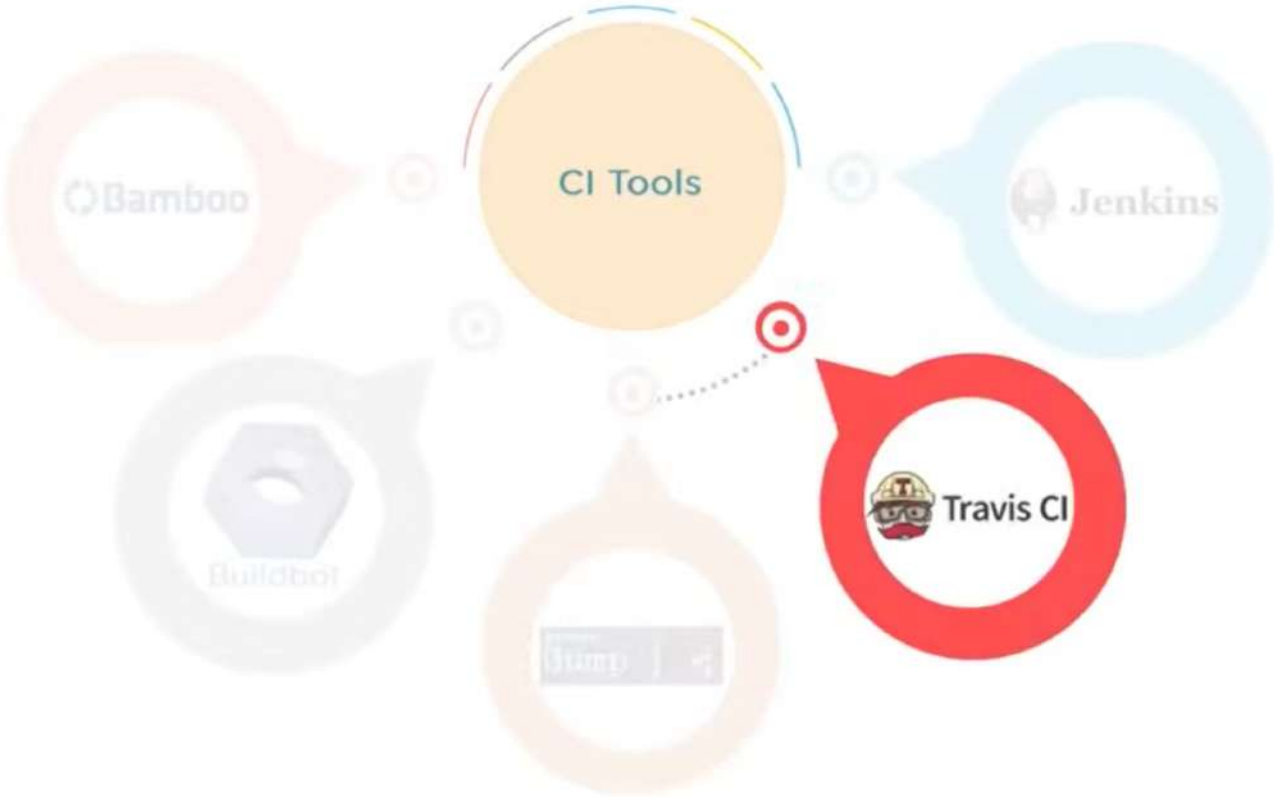
Buildbot is an open-source framework for automating software build, test and release processes. It is written in Python and supports distributed, parallel execution of jobs across multiple platforms.

Continuous Integration Tools

Apache Gump is designed with the aim to build and test all the open source Java projects, every night. It makes sure that all the projects are compatible at both API level and functionality level.

Continuous Integration Tools

Travis CI is a hosted, distributed continuous integration service used to build and test software projects hosted at GitHub. It's built for projects and team of all sizes and supports over 20 different languages.



Continuous Integration Tools

Jenkins is an open source automation server written in Java. It is used to automate software development process via continuous integration and facilitates continuous delivery.


Features of Jenkins
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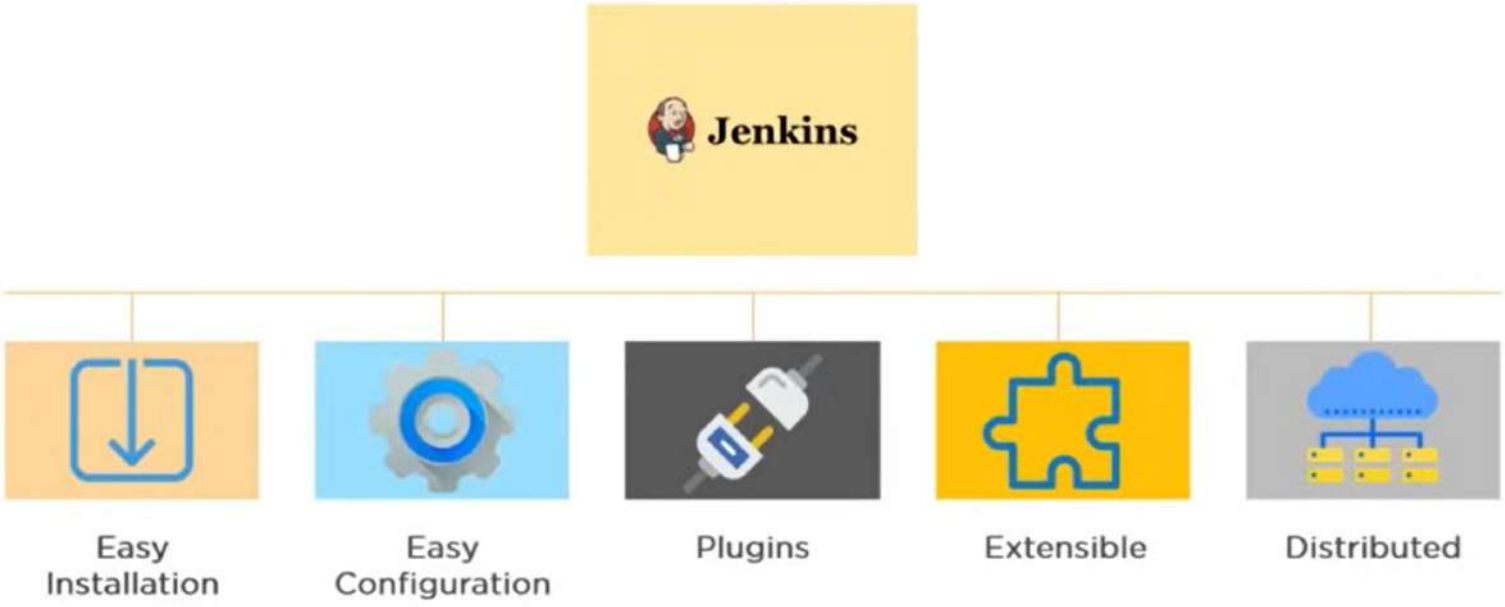
Features of Jenkins

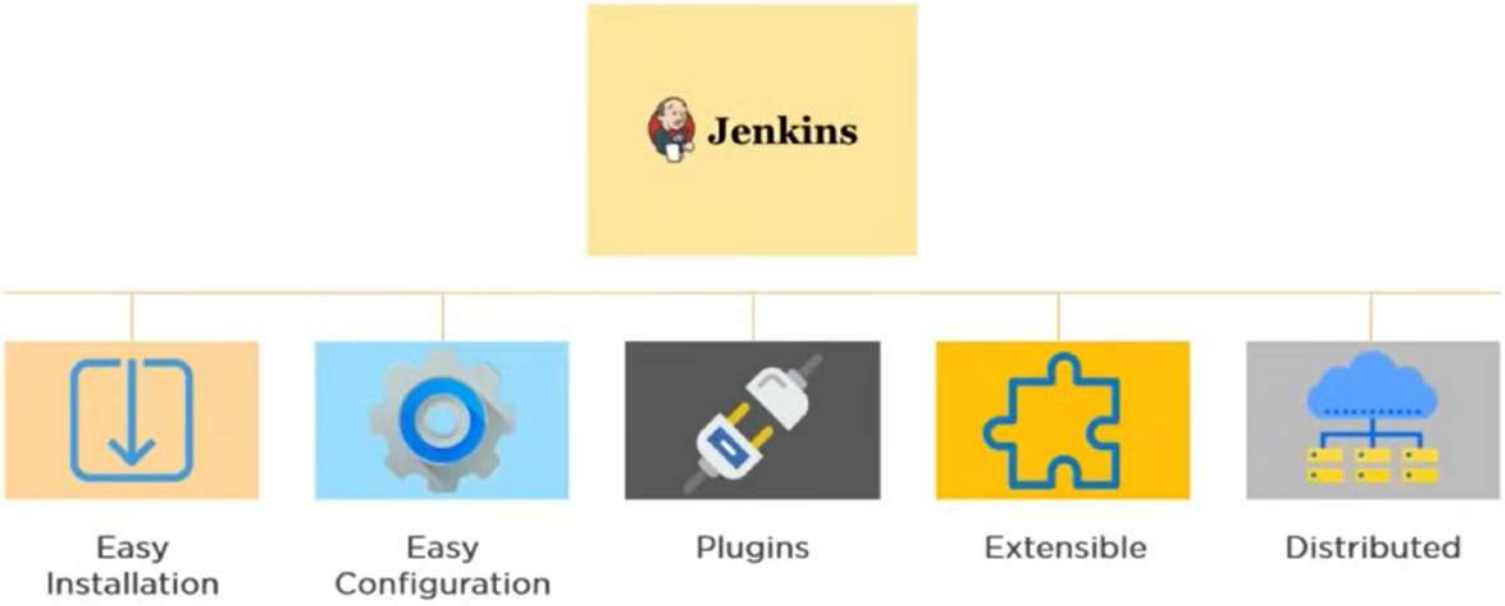
Jenkins is a self contained Java-based program, ready to run with packages for Windows, Mac OS X and Unix-like OS

Features of Jenkins



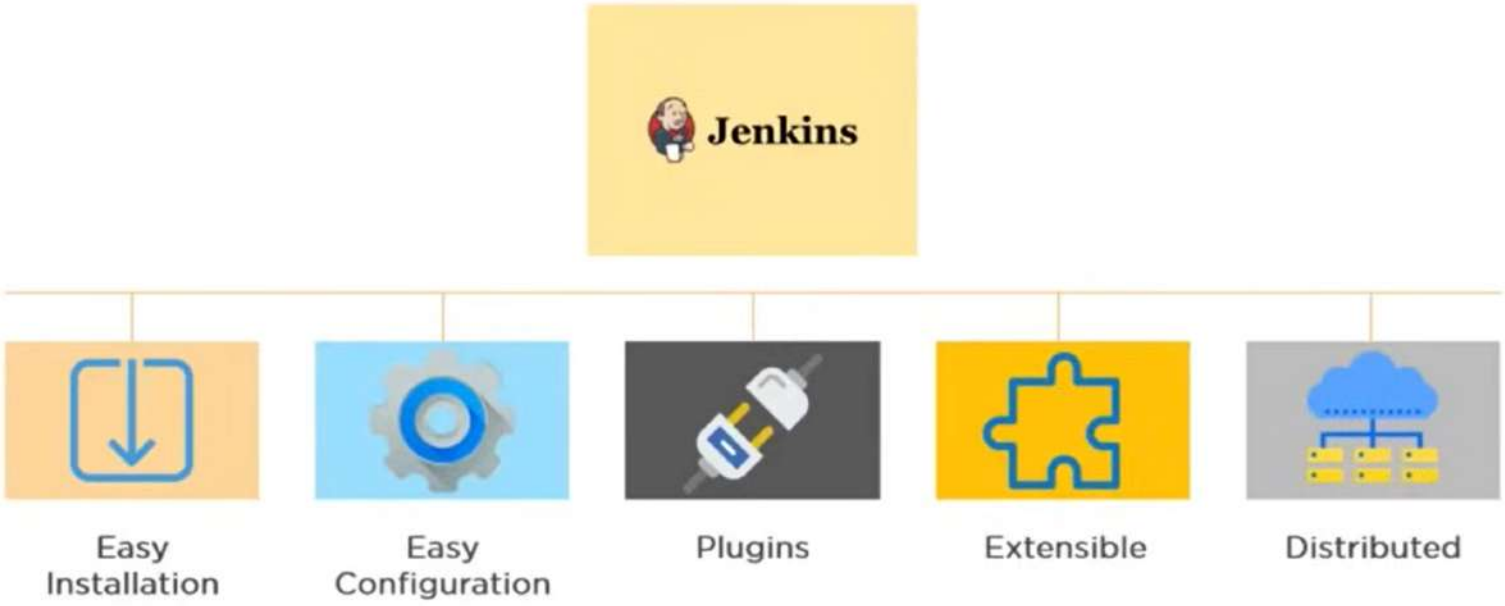
It can be easily set up and configured via its web interface which includes error checks and built-in help

Features of Jenkins



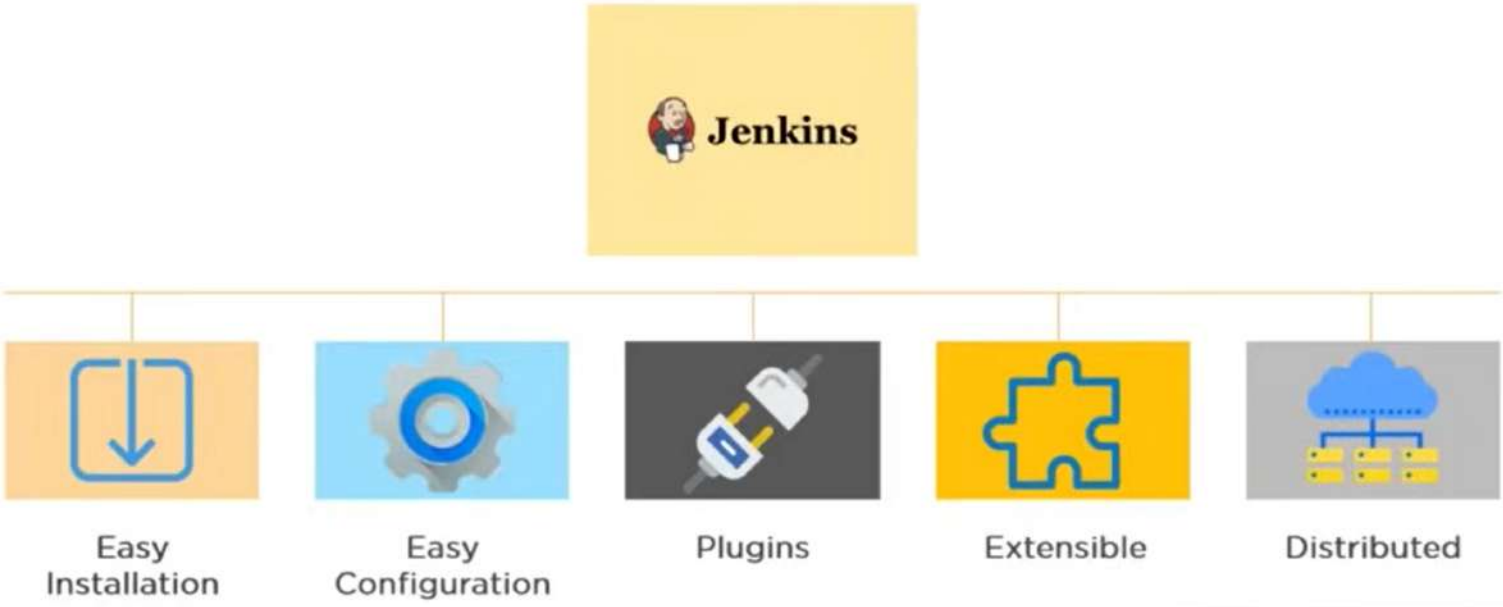
It has hundreds of plugins in the Update Center and integrates with every tool in the CI and CD toolchain

Features of Jenkins



Jenkins can be extended via its plugin architecture and provides nearly infinite possibilities for what it can do

Features of Jenkins



Jenkins Pipeline

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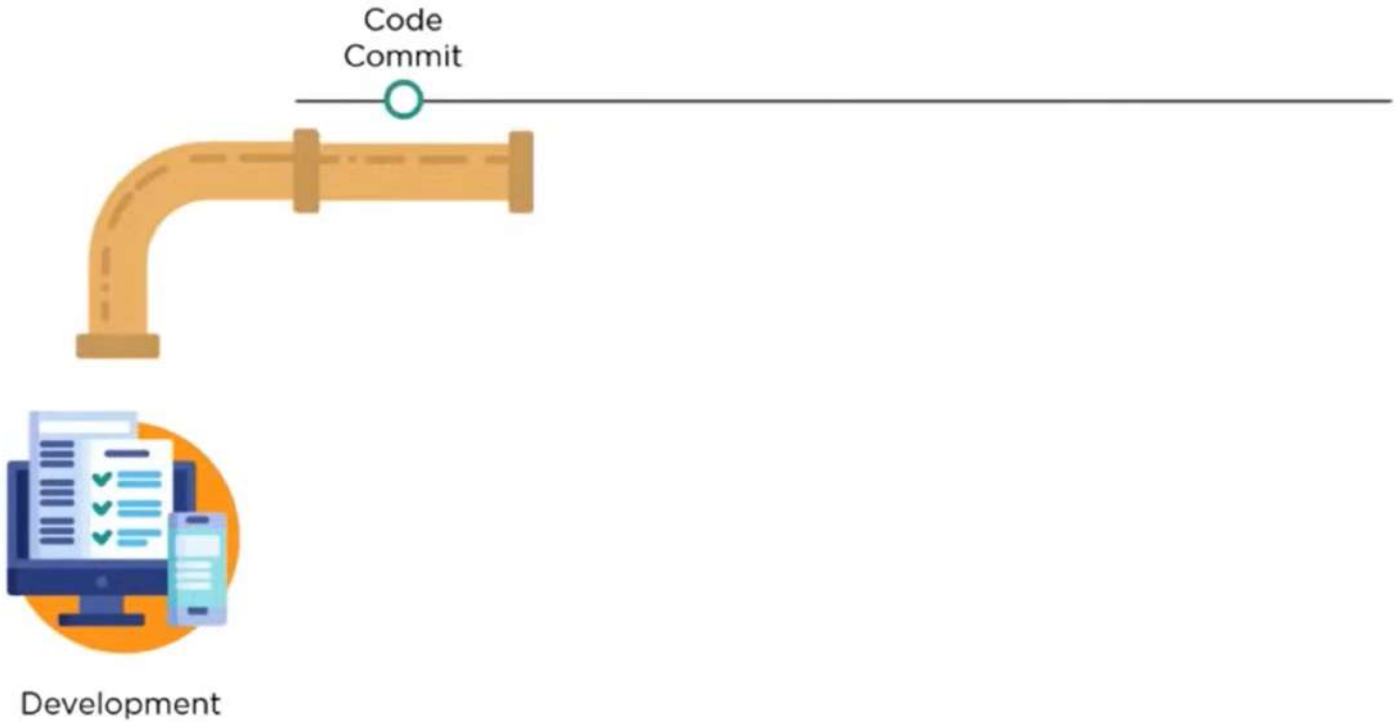
Jenkins Pipeline

Jenkins Pipeline



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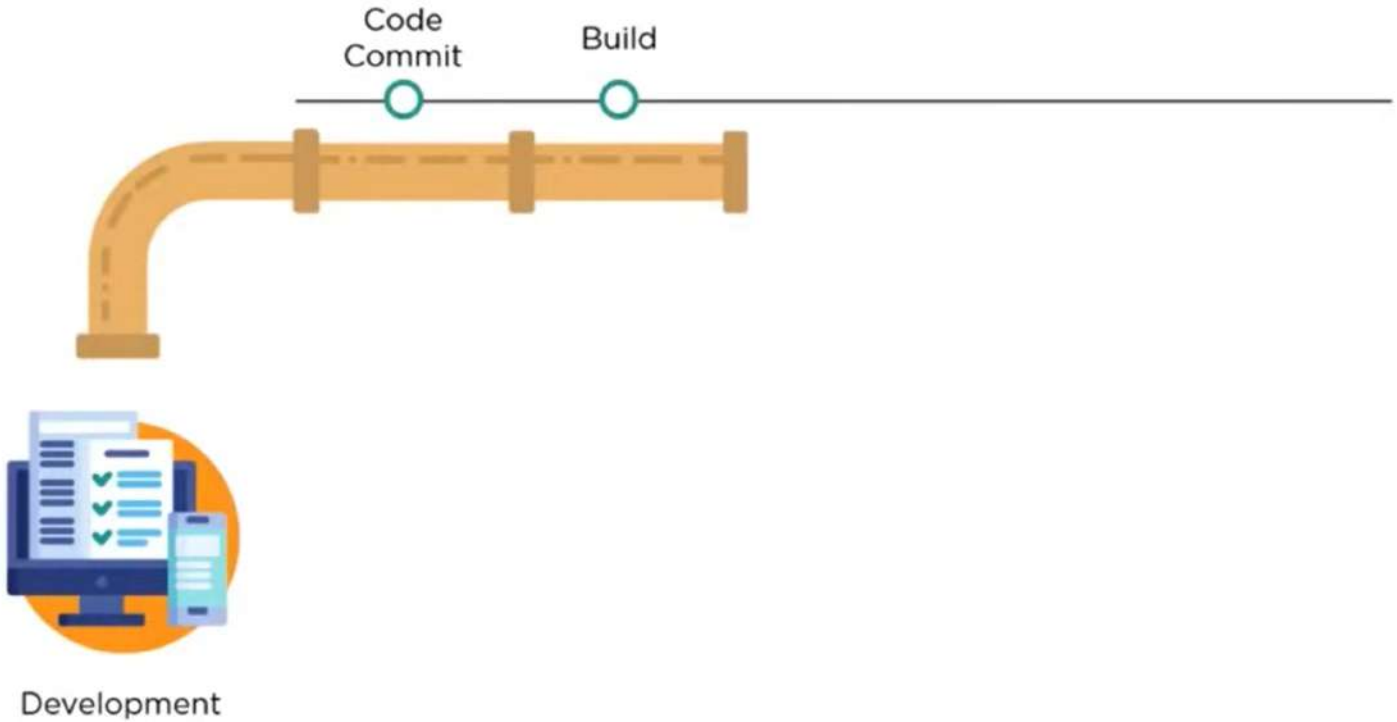

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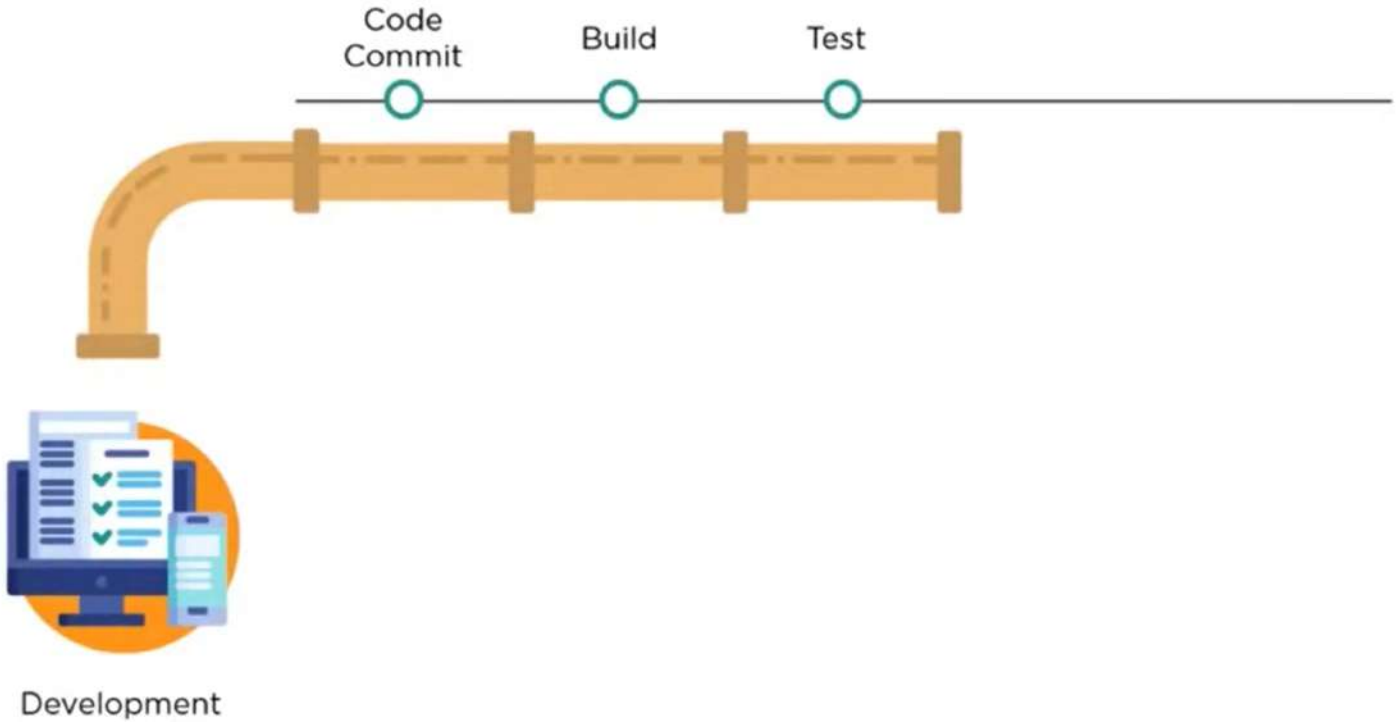

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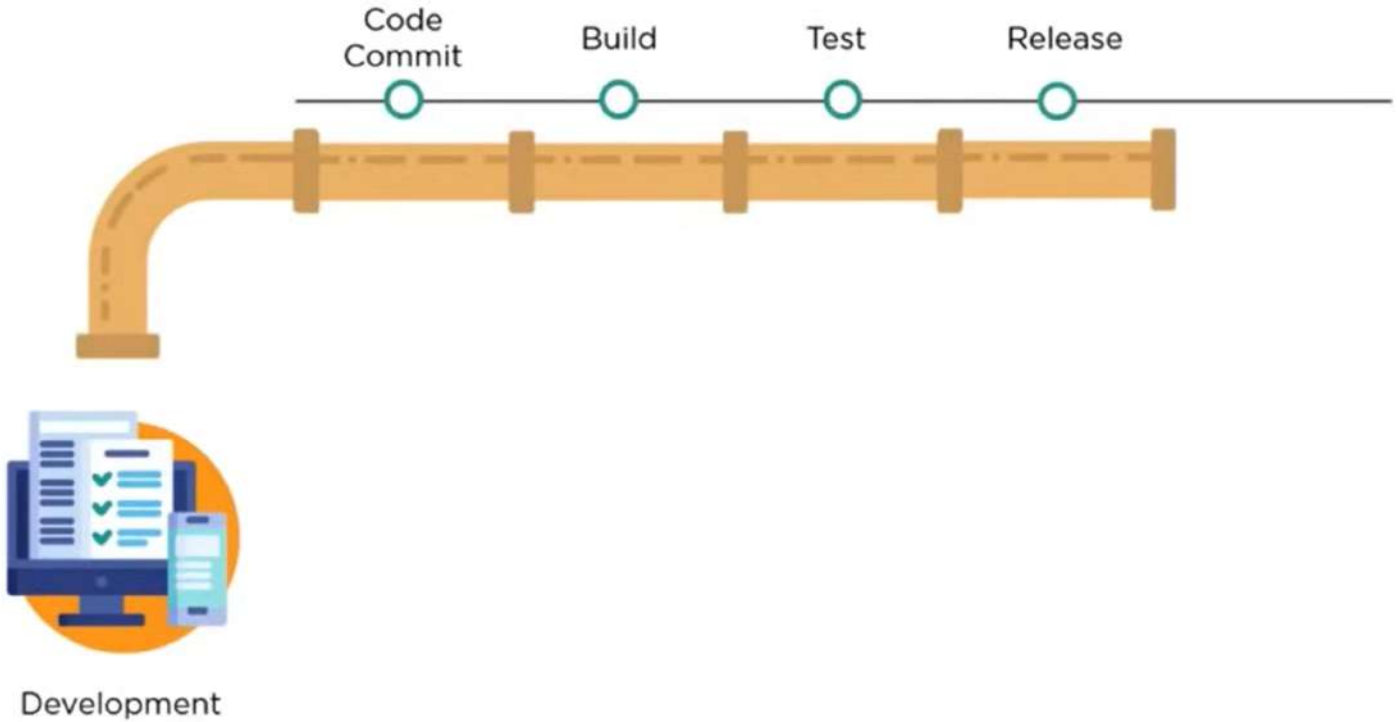

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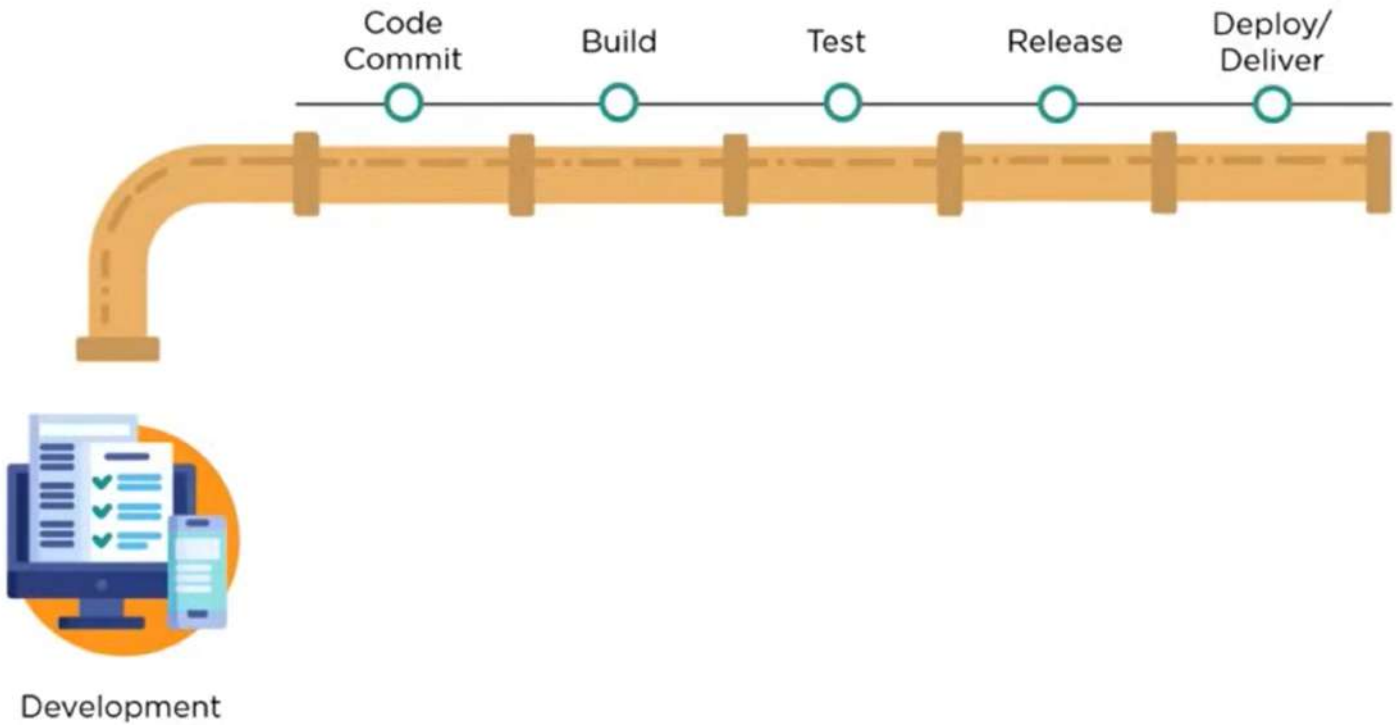

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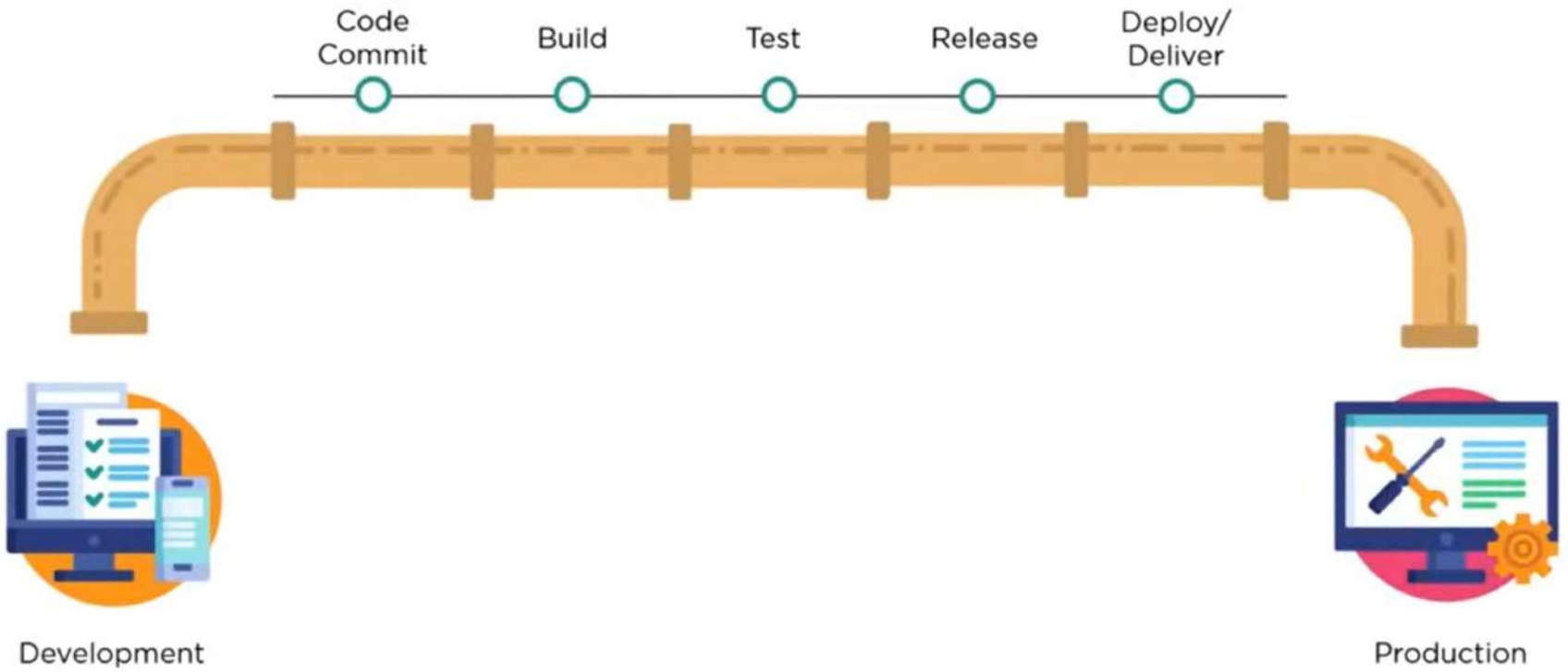

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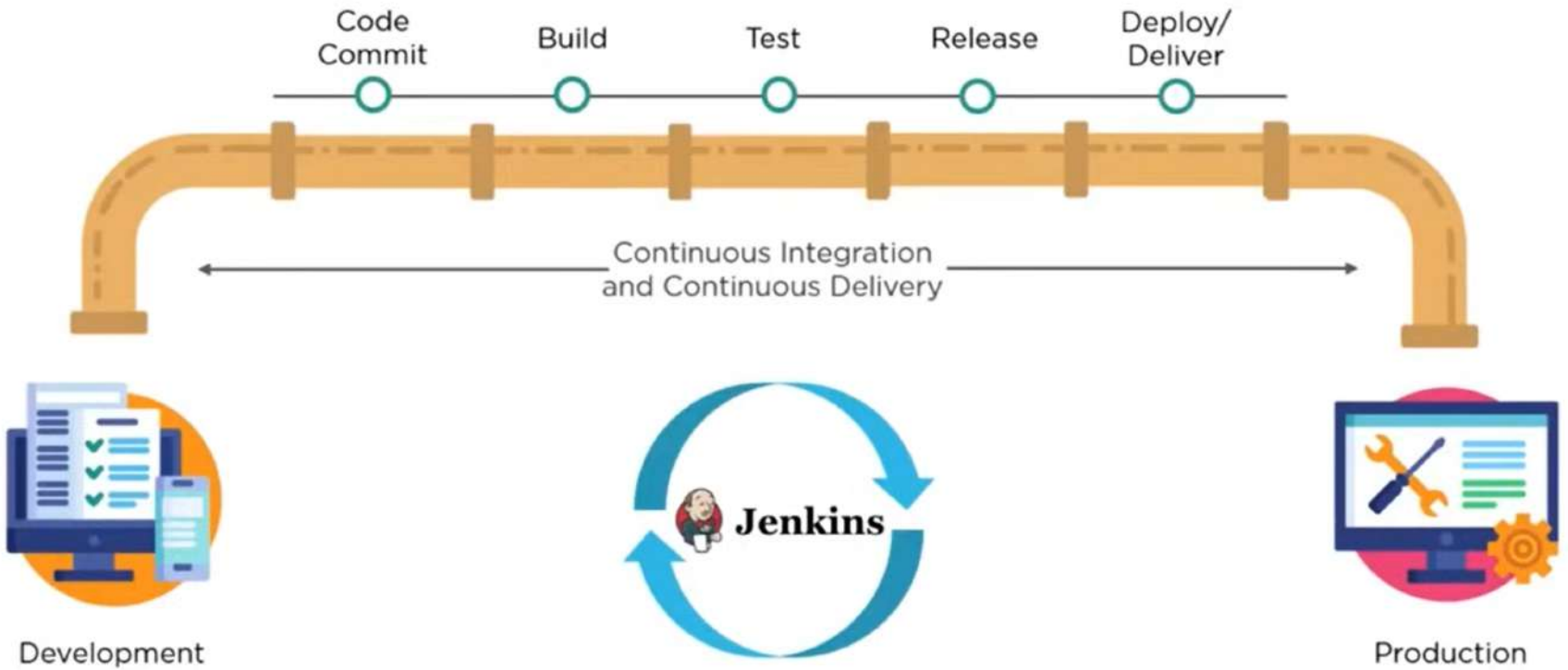

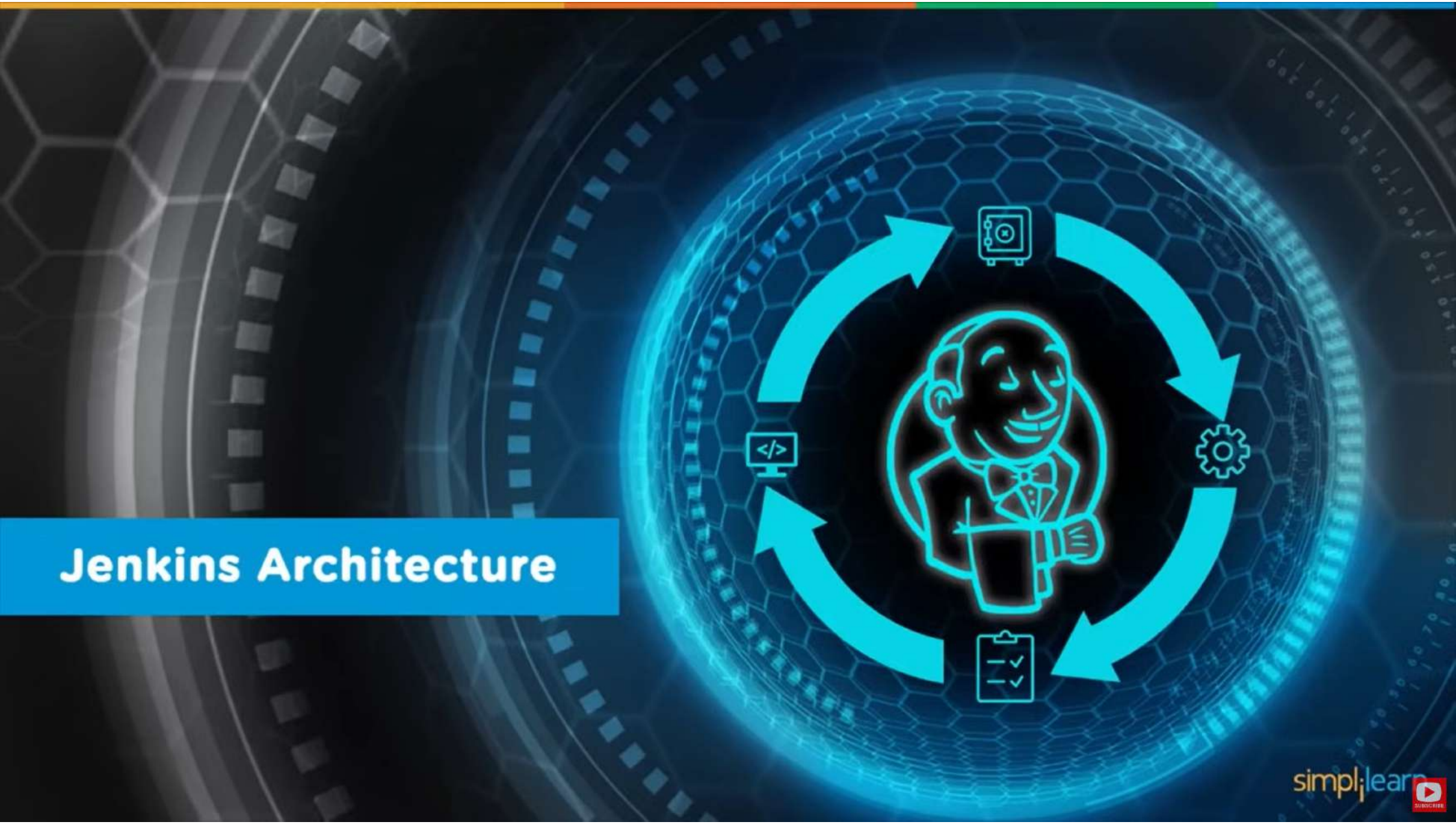
Jenkins Architecture
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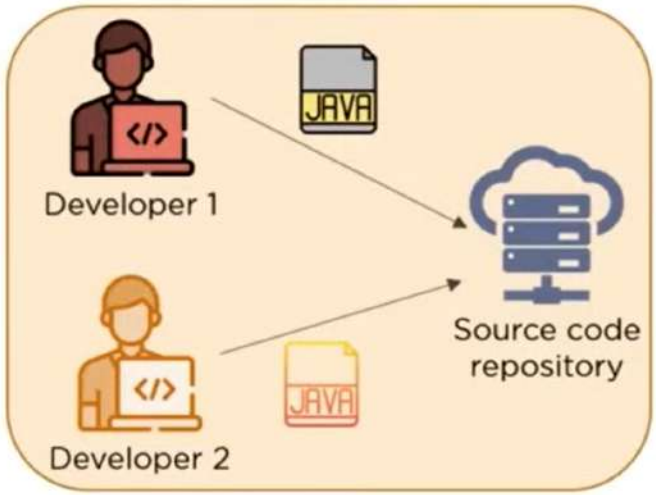
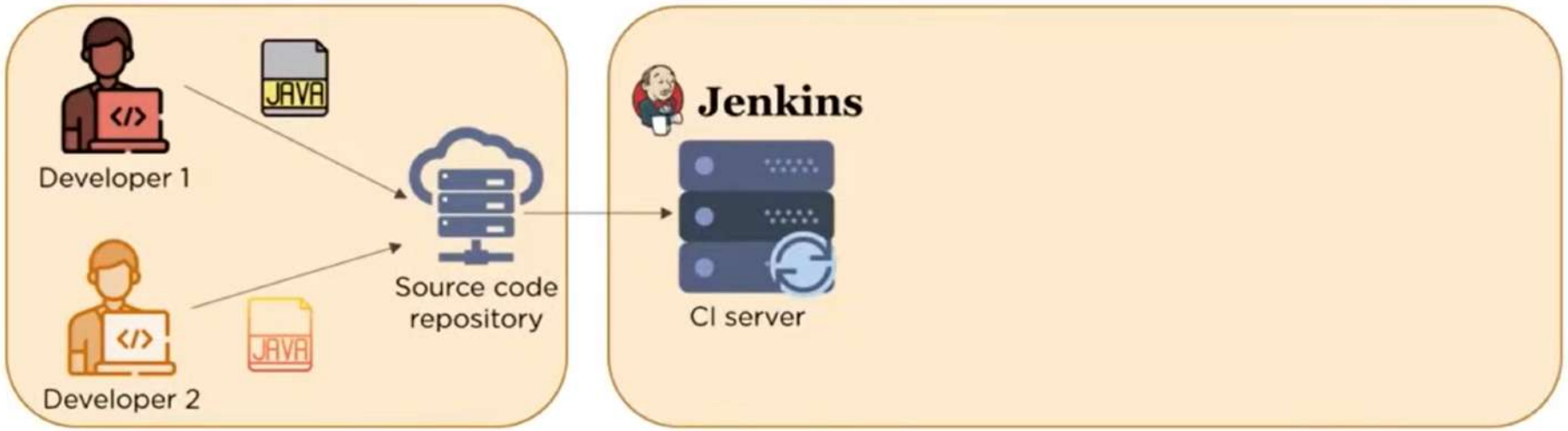
Jenkins Architecture



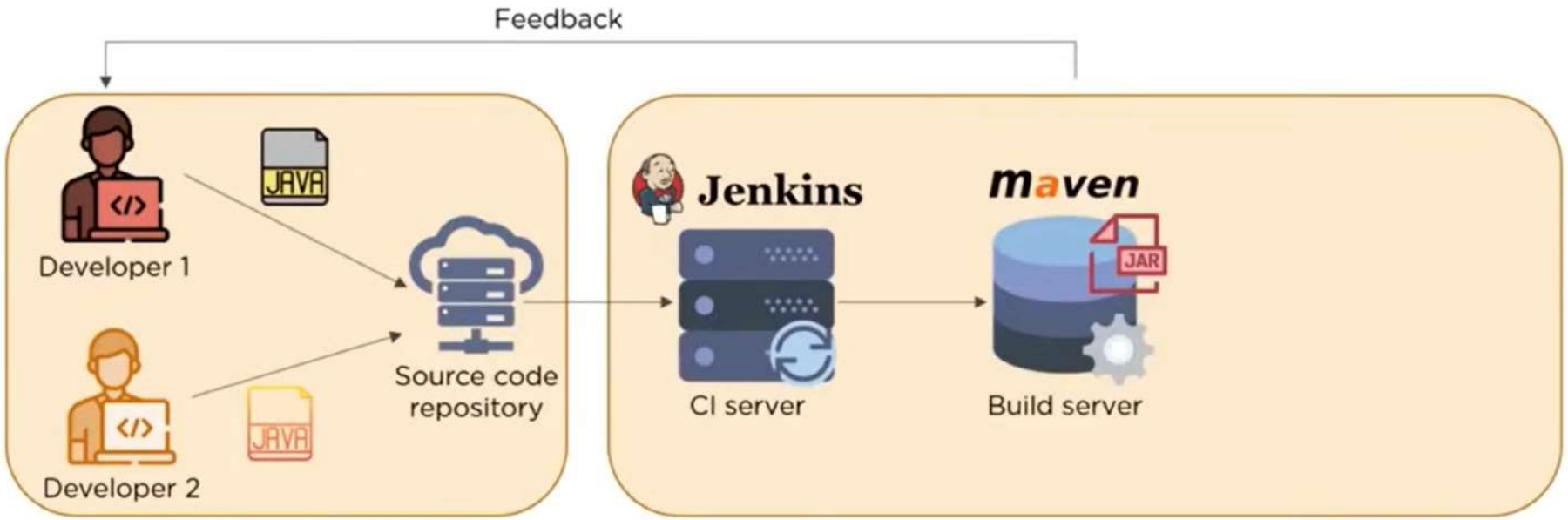
Developers commit changes to the source code

Jenkins Architecture



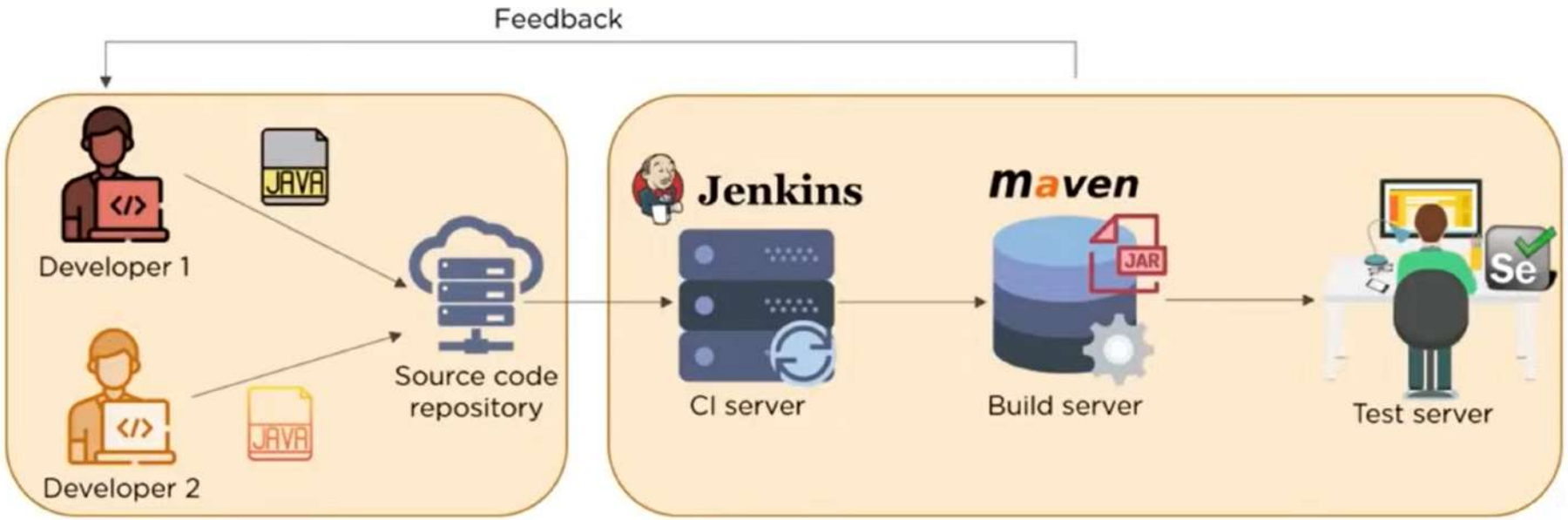
Jenkins server checks the repository at regular intervals and pulls any newly available code

Jenkins Architecture



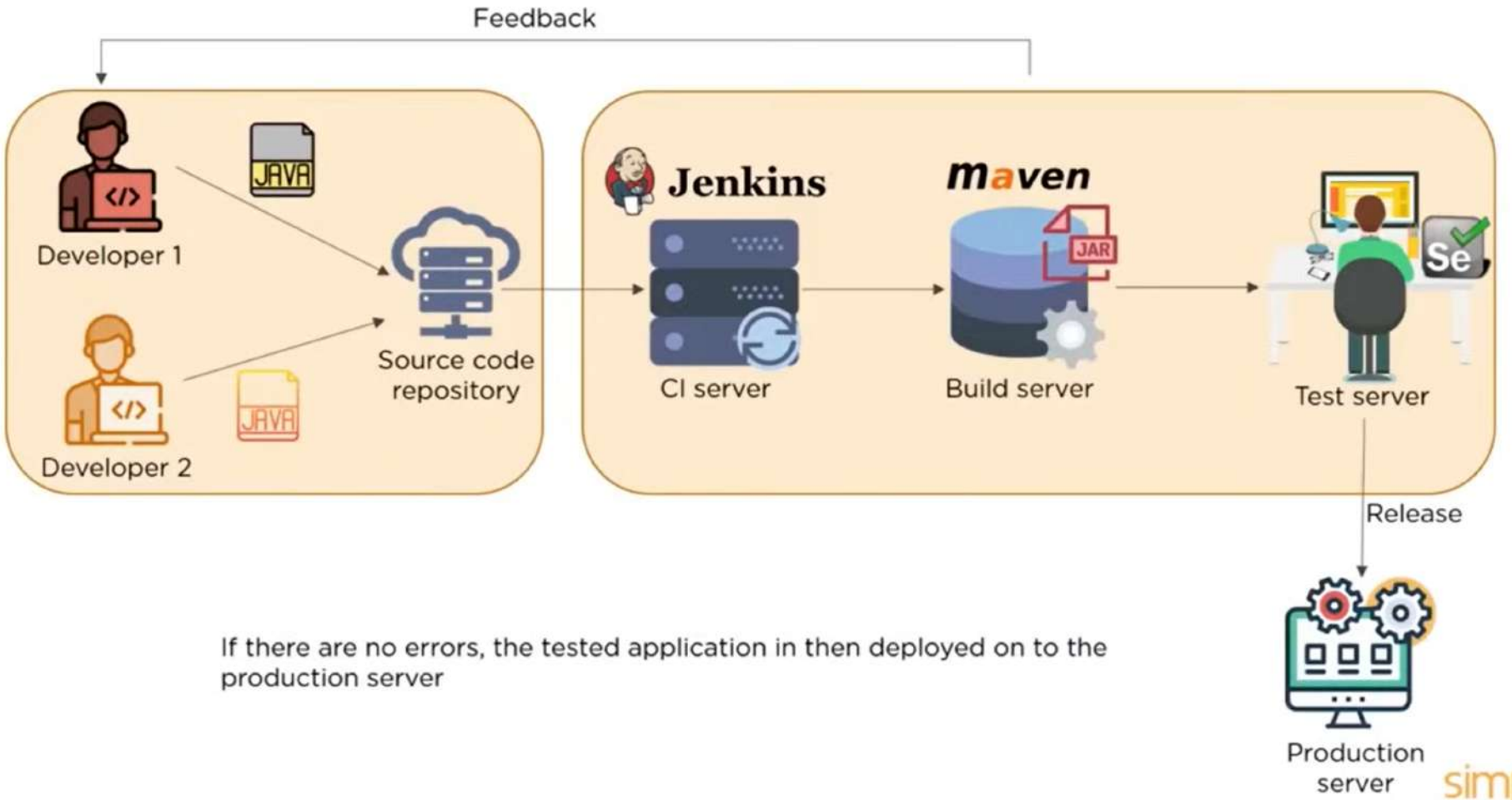
Build Server builds the code into an executable file. Here, Java file is being converted into JAR file. In case the build fails, a feedback is sent to the developers

Jenkins Architecture



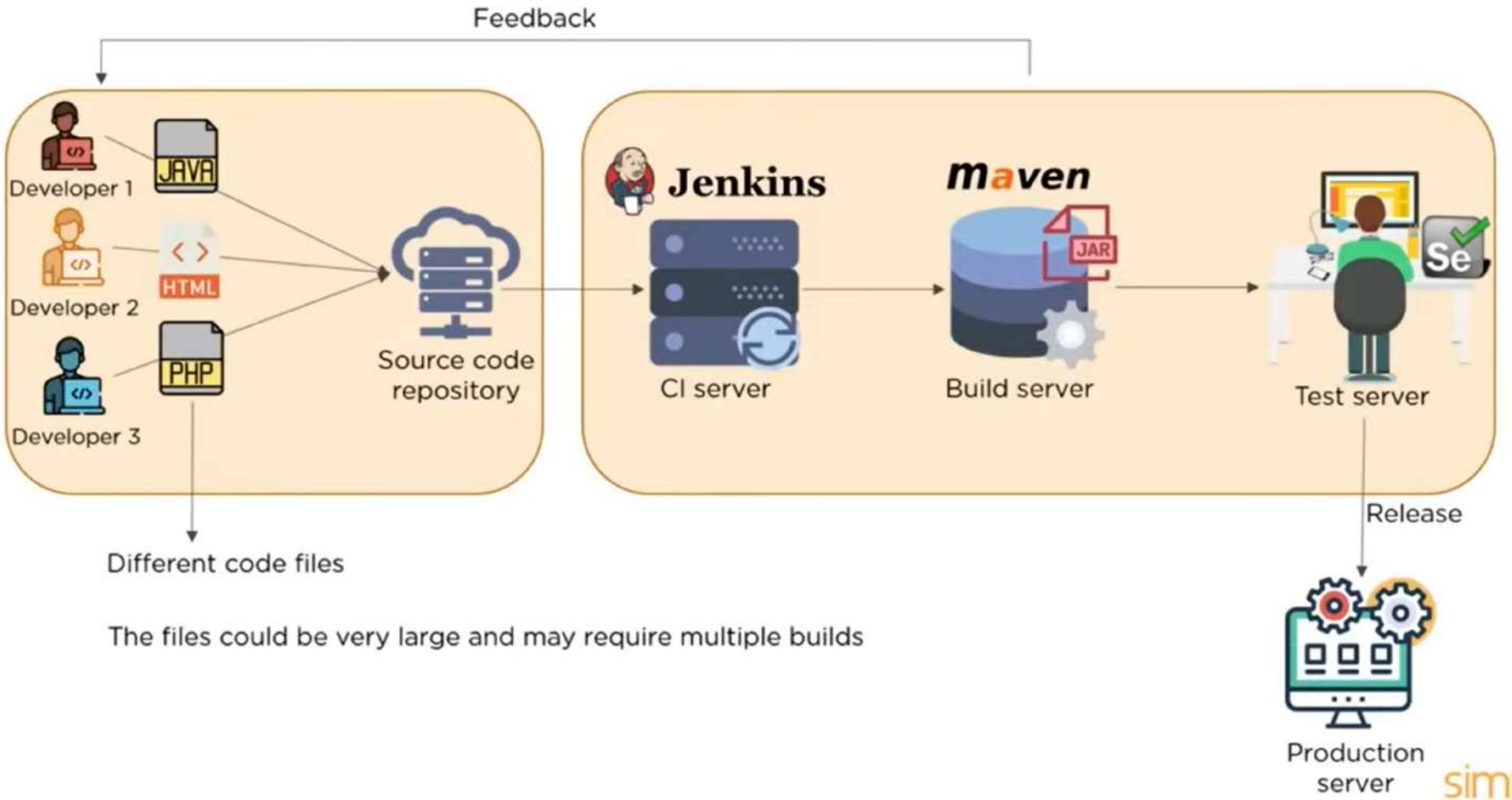
Jenkins then deploys the build application on to test server for testing. If the test fails, feedback is immediately passed on to the developers

Jenkins Architecture



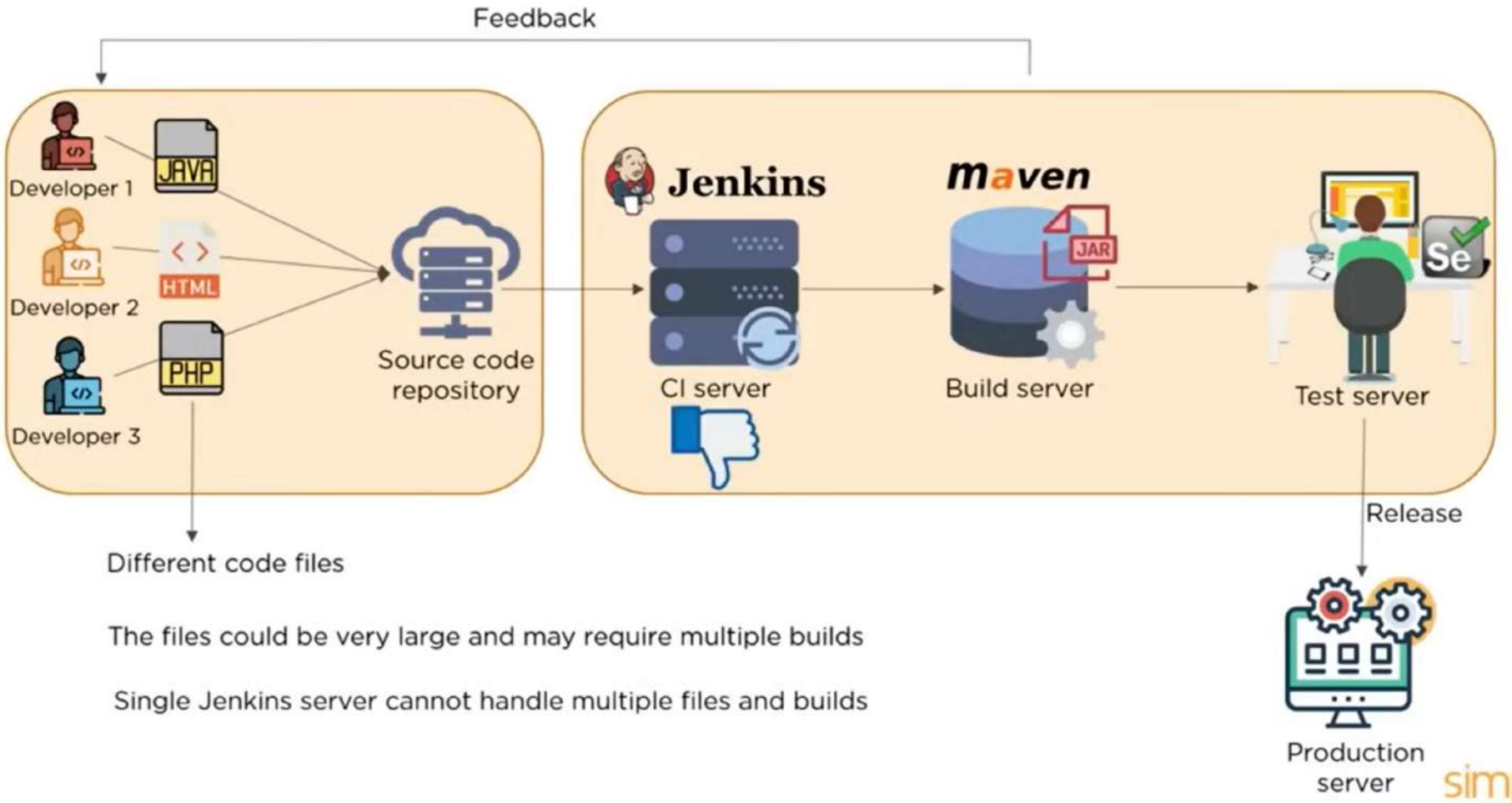
If there are no errors, the tested application in then deployed on to the production server

Jenkins Architecture



The files could be very large and may require multiple builds

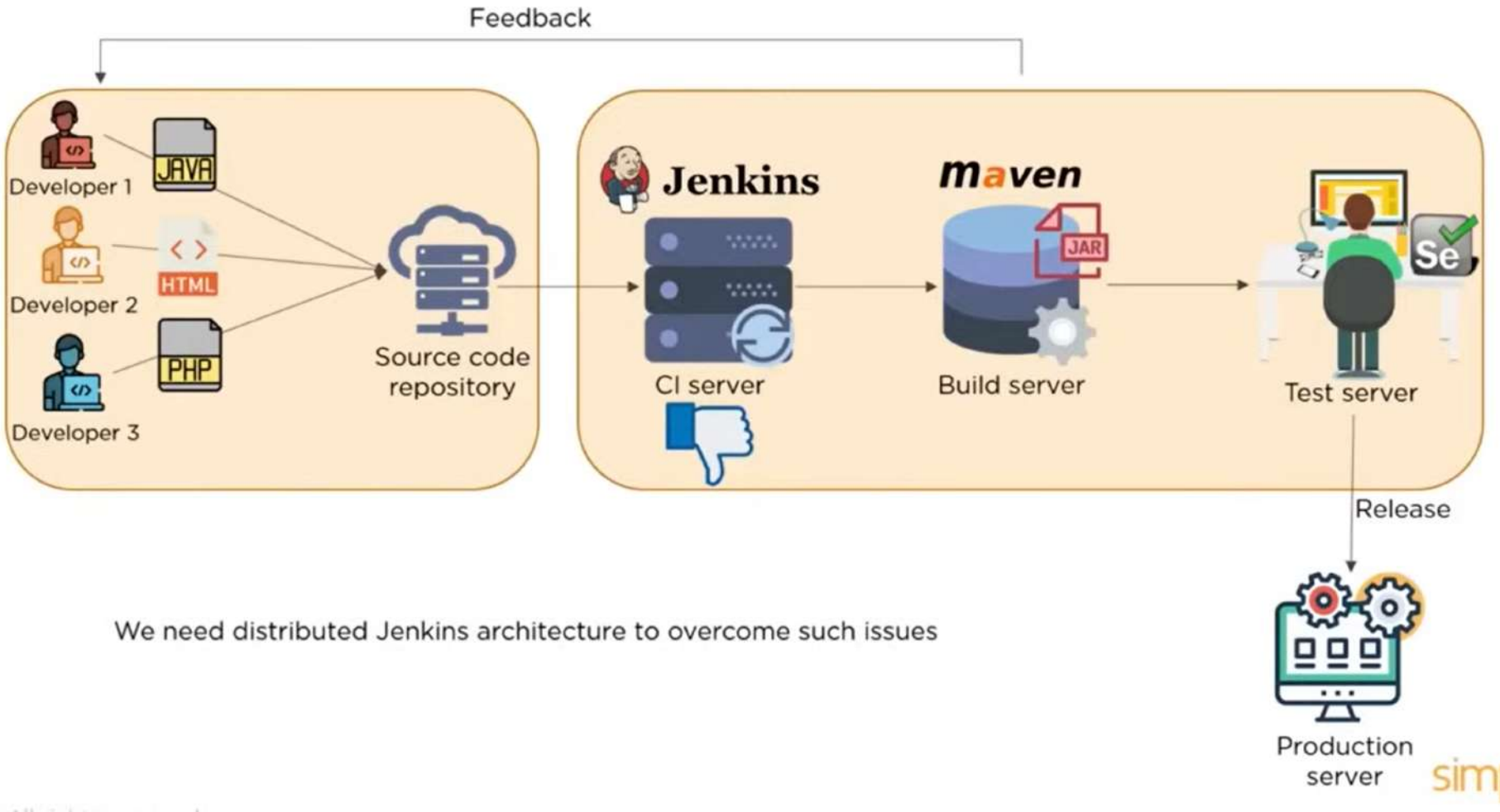
Jenkins Architecture



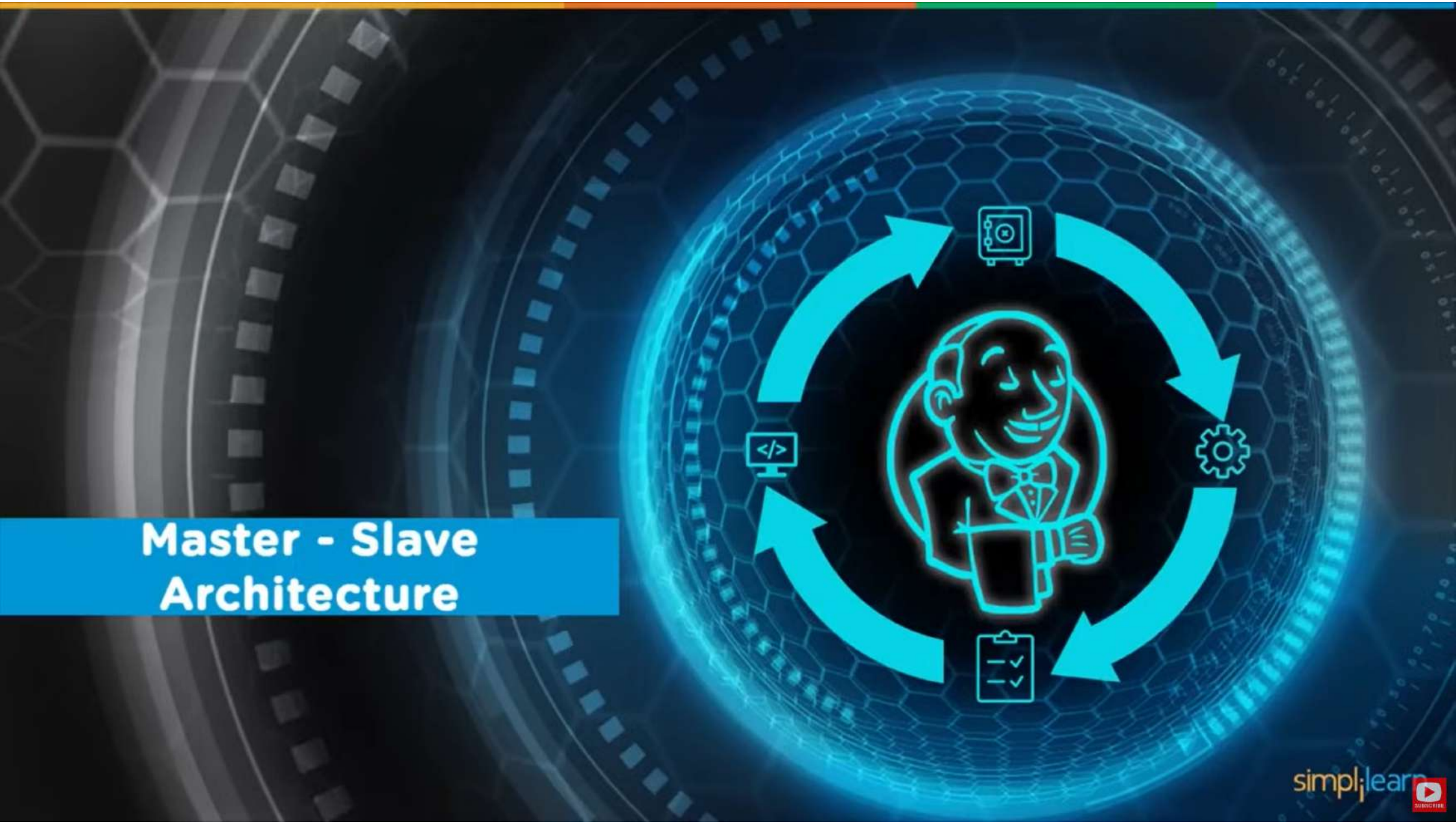
The files could be very large and may require multiple builds

Single Jenkins server cannot handle multiple files and builds

Jenkins Architecture



We need distributed Jenkins architecture to overcome such issues


Master - Slave
Architecture
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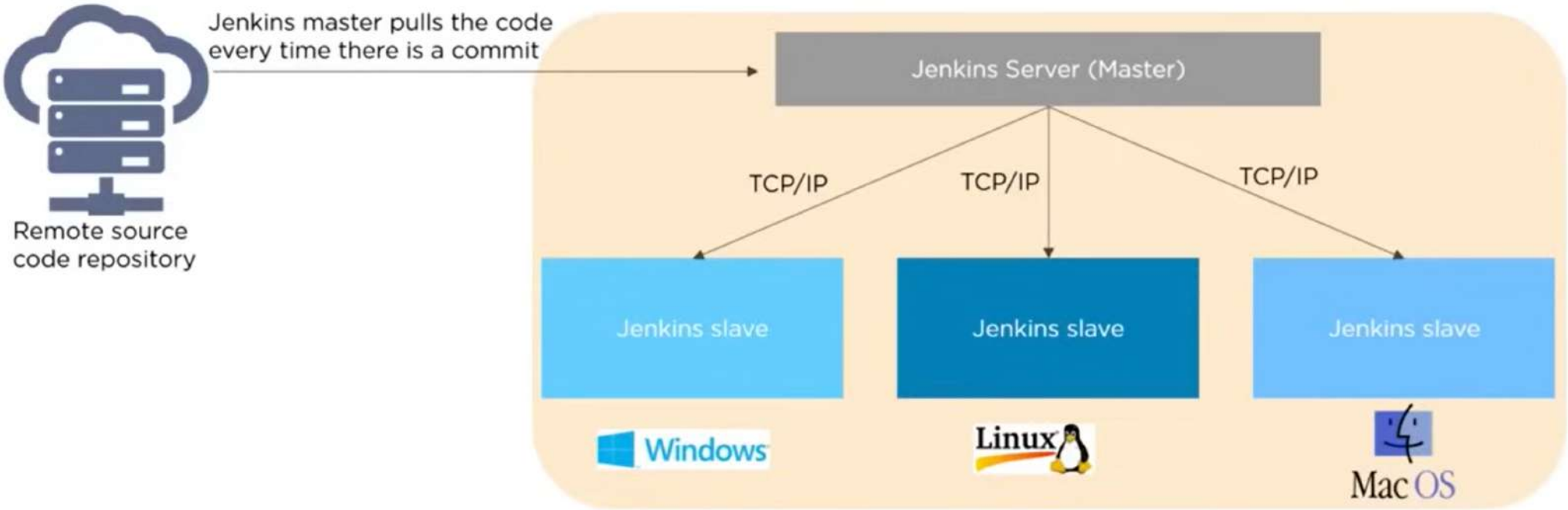
Jenkins Master-Slave Architecture



- Jenkins master distributes its workload to all the slaves
- On request from Jenkins master, the slaves carry out builds and tests and produce test reports

Jenkins Case Study

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Jenkins Case Study

Automotive systems are becoming more sophisticated and complex, so the focus for automotive manufacturers is shifting from hardware to software

Many vehicle features, capabilities and performance enhancements are being implemented in software

Jenkins Case Study

BOSCH

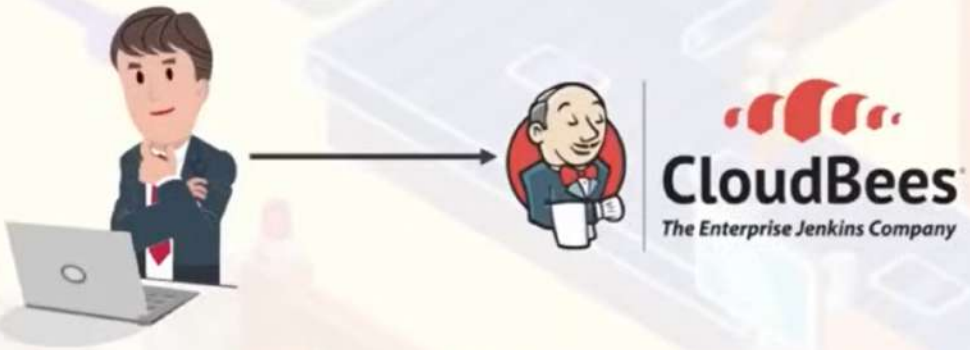
BOSCH found a growing need to help its software engineers produce and deliver higher quality software faster

CHALLANGE

Manage and streamline the development of increasingly complex automotive software by adopting CI and CD practices to shorten the entire development and delivery process

Jenkins Case Study

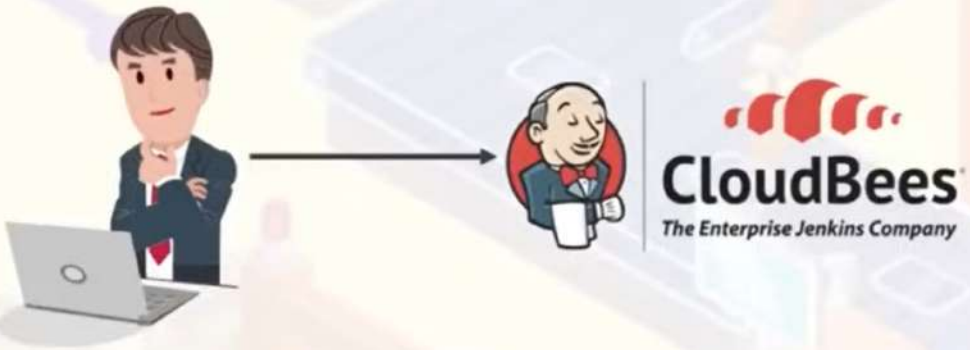
BOSCH



CloudBees Jenkins platform helped them meet the demands by reducing manual steps and duplication of effort in their build, deploy and test processes

Jenkins Case Study

BOSCH



CloudBees
The Enterprise Jenkins Company

RESULTS

- 3 day build process reduced to less than 3 hours
- Large scale deployment kept on track by expert support
- Visibility and transparency improved with Jenkins Operations support