Instructor Notes:

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Lesson Objectives

- Introduction to CI
- Jenkins Introduction
- Creating Job in Jenkins
- Adding plugin in Jenkins
- Creating Job with Maven & Git

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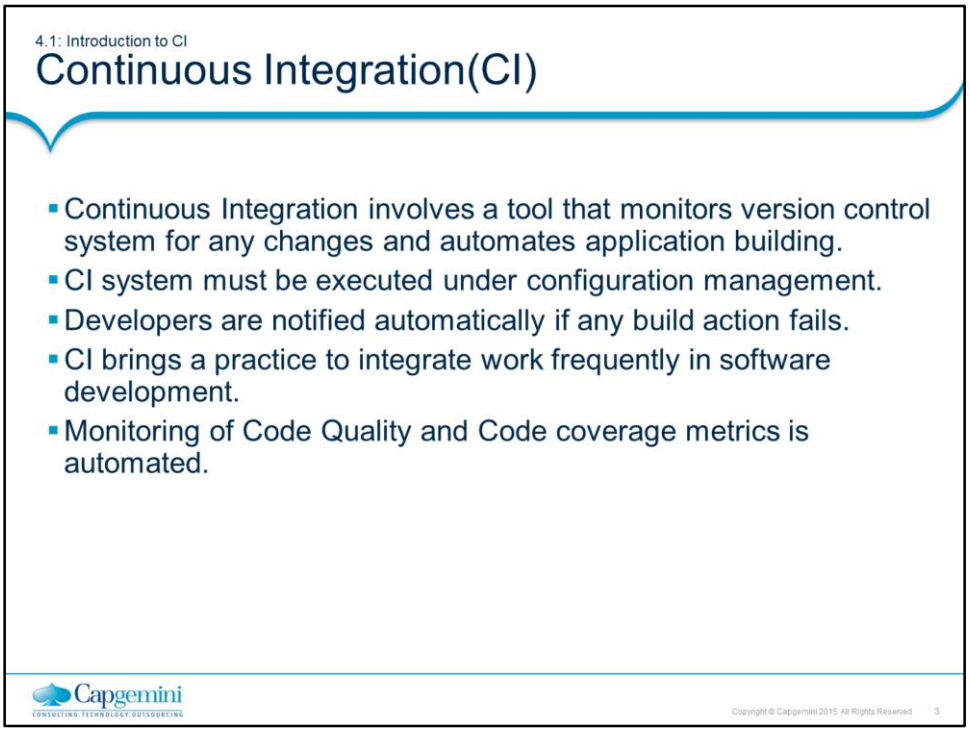

In a Continuous Integration Environment source code is maintained in a central location where an application monitors the repository and springs into action when it notices changes (commits) to the code.
CI System must be able to be built and tested automatically.
A coding standard is the set of guidelines that developers must adhere to on a project. On many projects, ensuring adherence is largely a manual process that is performed by a code review. CI can run a build script to report on adherence to the coding standards by running a suite of automated static analysis tools that inspect the source code against the established standard whenever a change is applied

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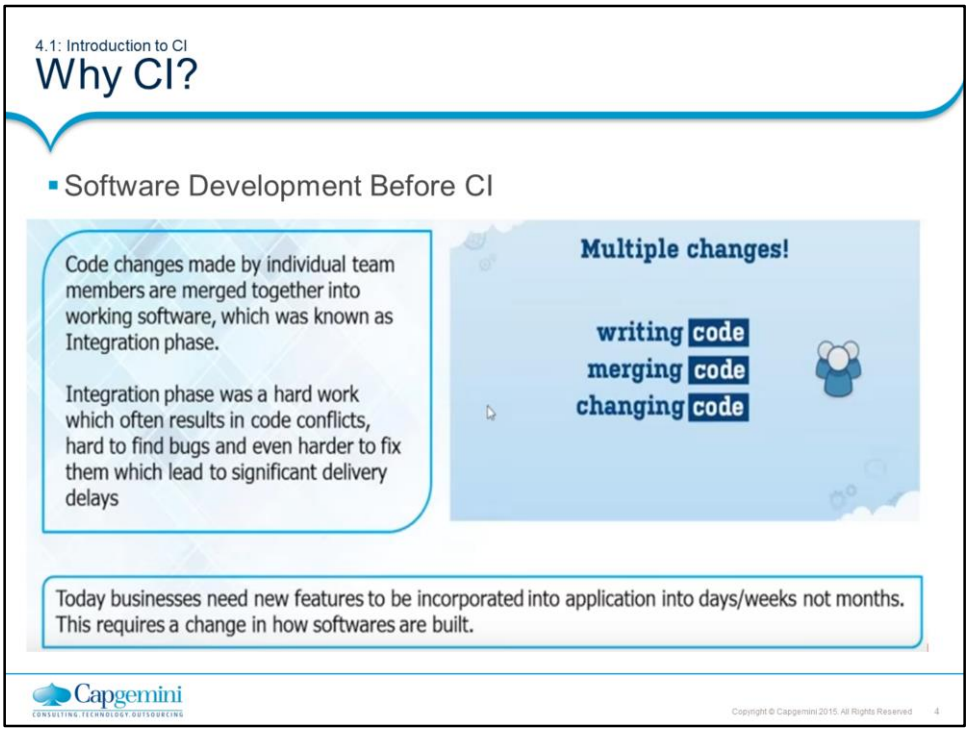

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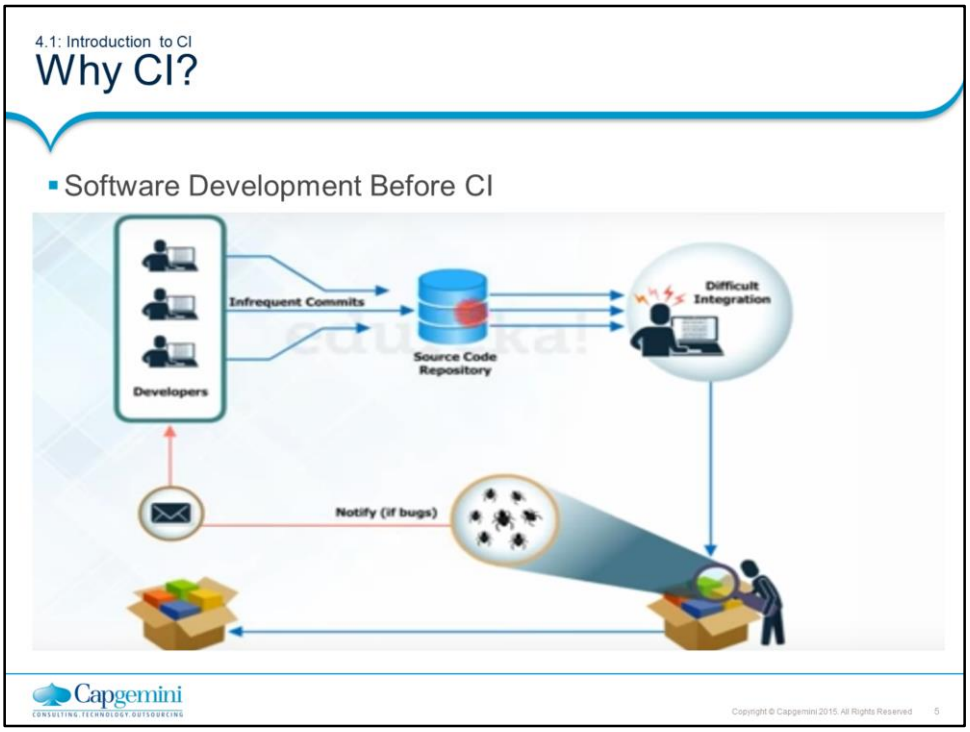

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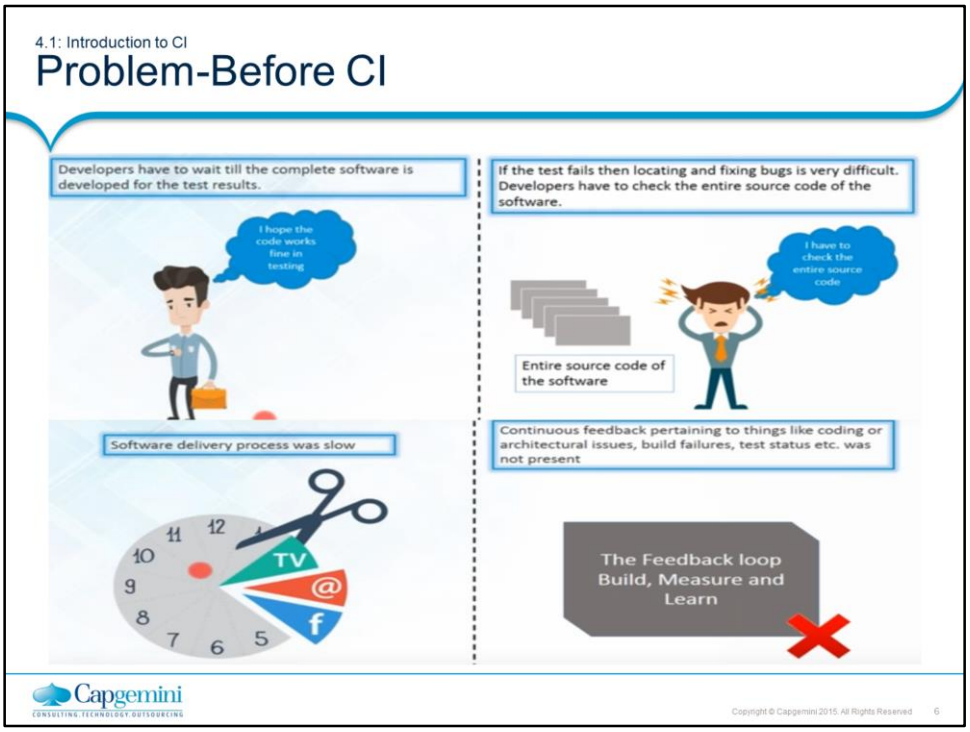

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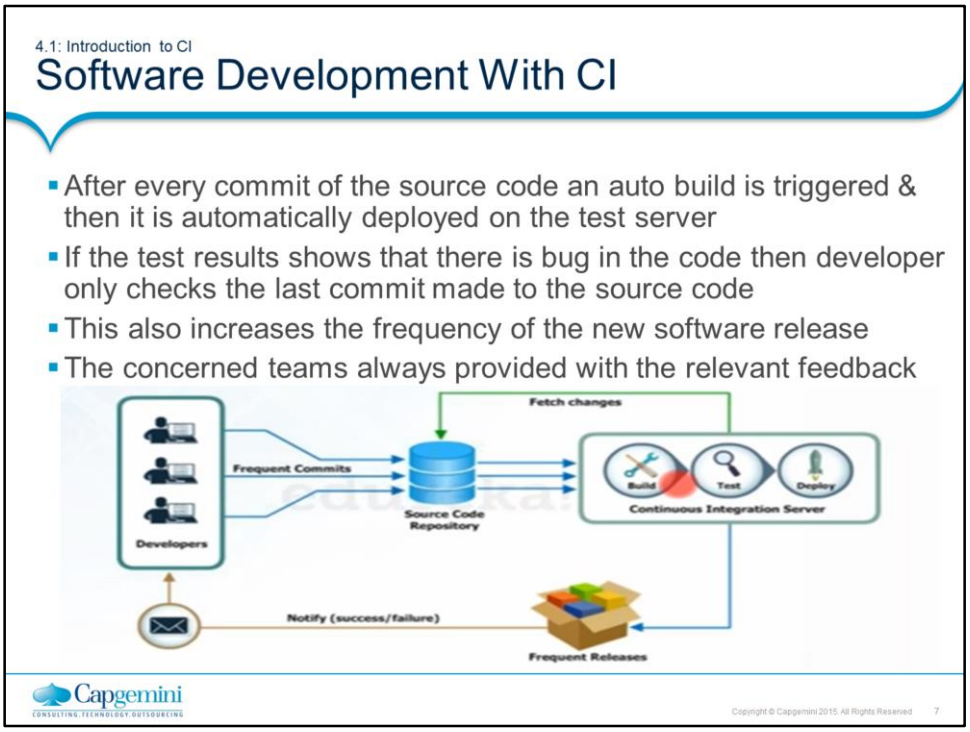


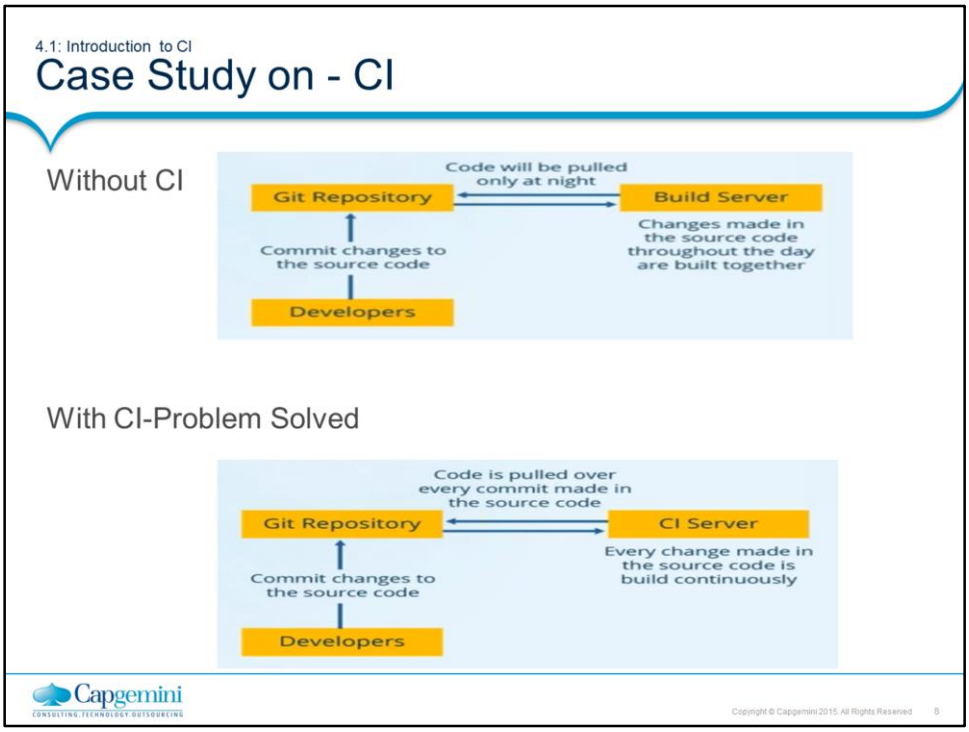
1: Application must run under source control management
2: Daily code commits to SVN will be baseline.
3: CI polls for any code changes in SVN and triggers build actions if any.
4: Automated build, testing and deployment of an application will be performed by CI.
5: After build action, developer will be accessible with latest code and build
6: Developers will be notified with any build errors and automated test results.

Need of CI in software Development

Helps to locate code based defects in a centralized location.
Tools can be used to automate deployment.
Minimizes integration errors in SVN during build process(Errors are uncovered during Manual Build) by invoking automation.
Increase amount of quality code and improve development standards.

Instructor Notes:

Tell about scenario if user is doing with or without CI .Give example of Nokia uploading



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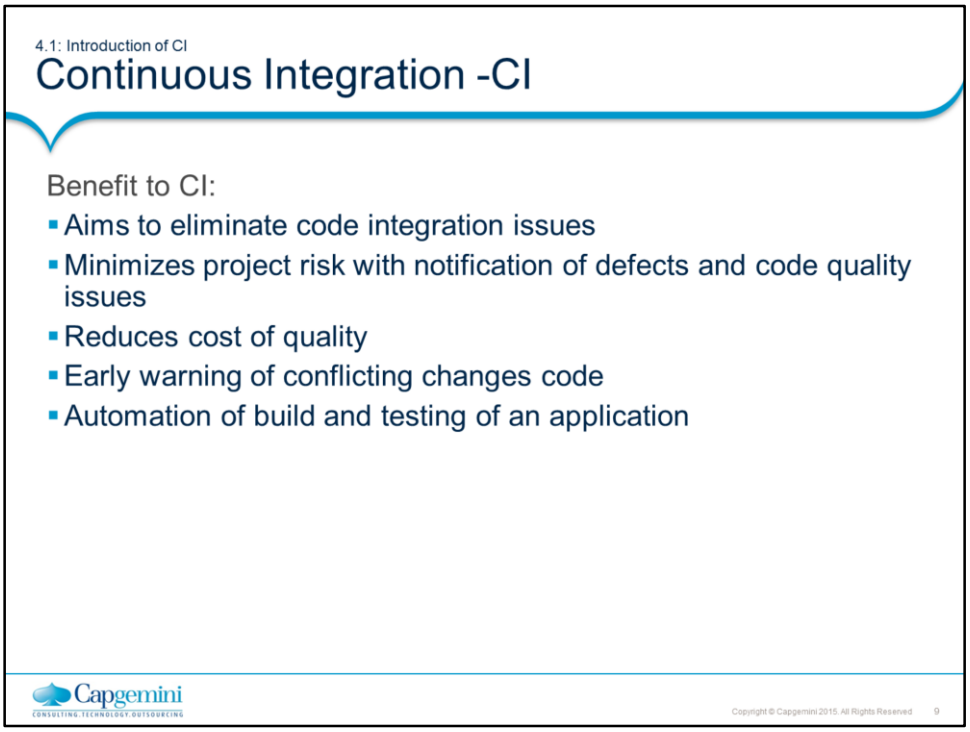

Reduce risks

By integrating many times a day, you can reduce risks on your project. Doing so facilitates the detection of defects, the measurement of software health and a reduction of assumptions.

Defects are detected and fixed sooner: Because CI integrates and runs tests and inspections several times a day, there is a greater chance that defects are discovered *when they are introduced* (i.e., when the code is checked into the version-control repository) instead of during late-cycle testing.

Health of software is measurable: By incorporating continuous testing and inspection into the automated integration process, the software product's health attributes, such as complexity, can be tracked over time.

Reduce assumptions: By rebuilding and testing software in a clean environment using the same process and scripts on a continual basis, you can reduce assumptions (e.g., whether you are accounting for third-party libraries or environment variables).

CI provides a safety net to reduce the risk that defects will be introduced into the code base. The following are some of the risks that CI helps to mitigate. We discuss these and other risks in the next chapter.

Lack of cohesive, deployable software

Late defect discovery

Low-quality software

Lack of project visibility

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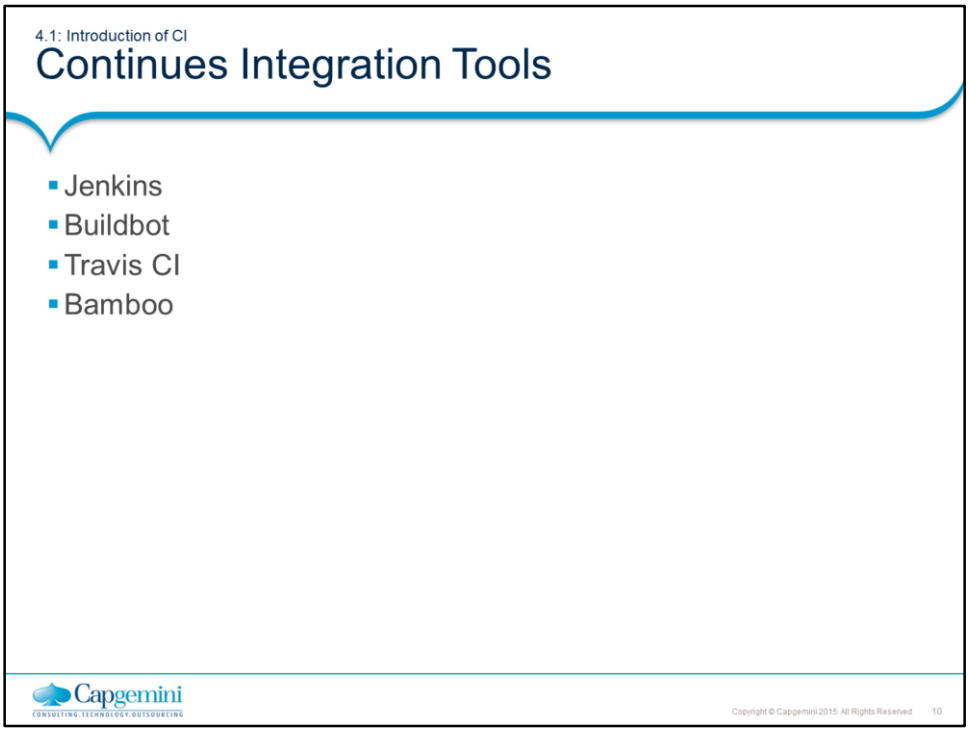

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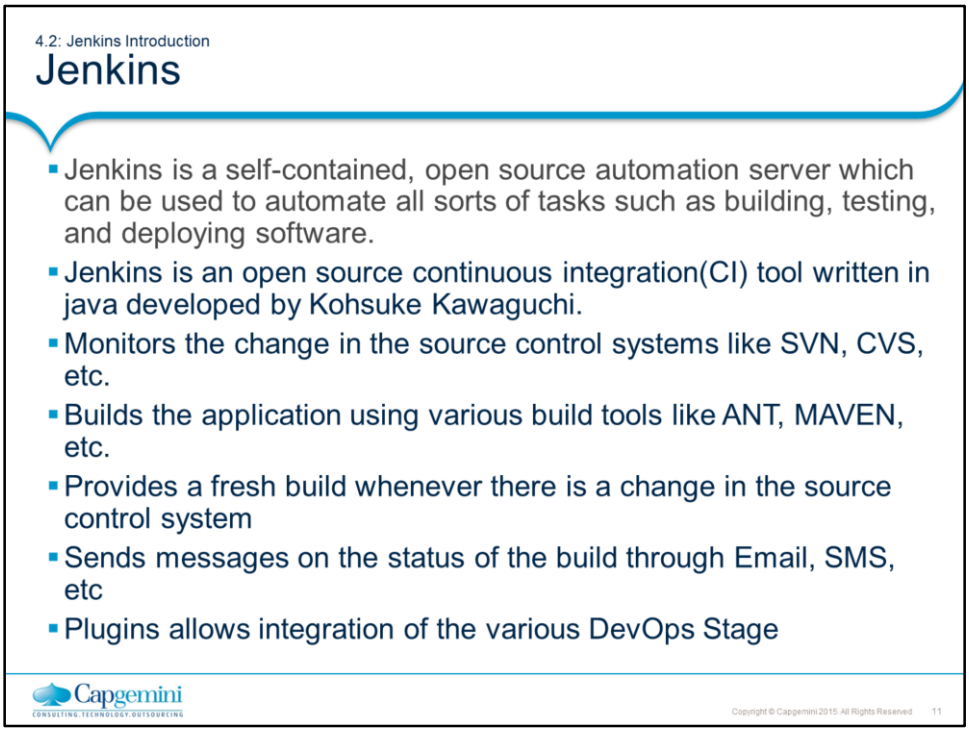
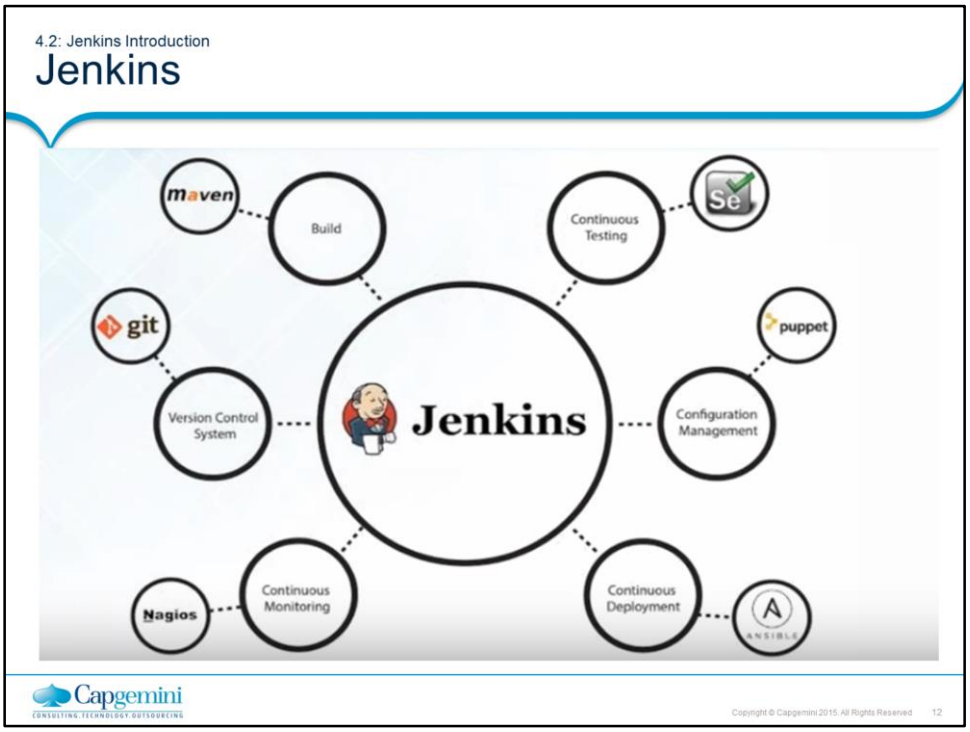


Instructor Notes:

What different models we can integrate with jenkin



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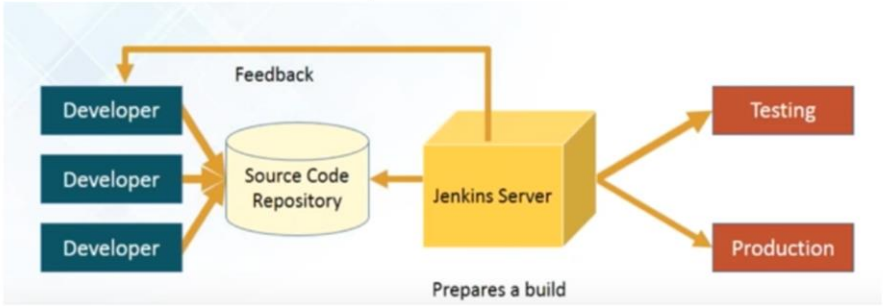
4.2: Jenkins Introduction

How Jenkins Works

How Jenkins works:

- Developers Commit changes to the source code
- CI server pulls that code & triggers a build
- The build application is then deployed on testing server for testing
- After testing the application ,it is then deployed on production server
- The concerned team constantly notified about build & test result



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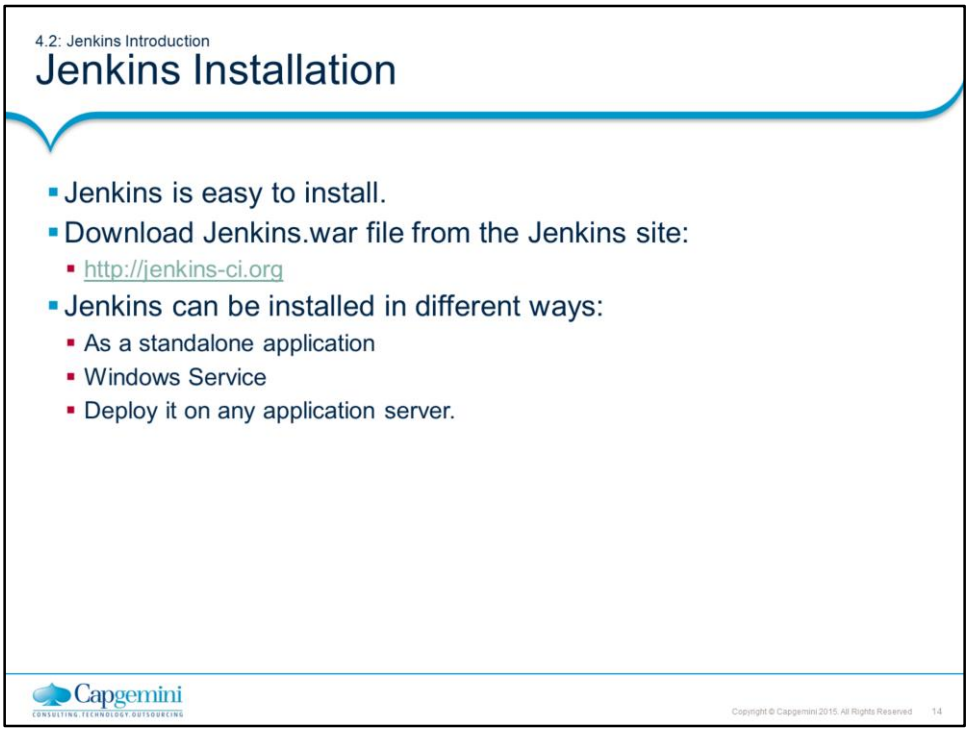

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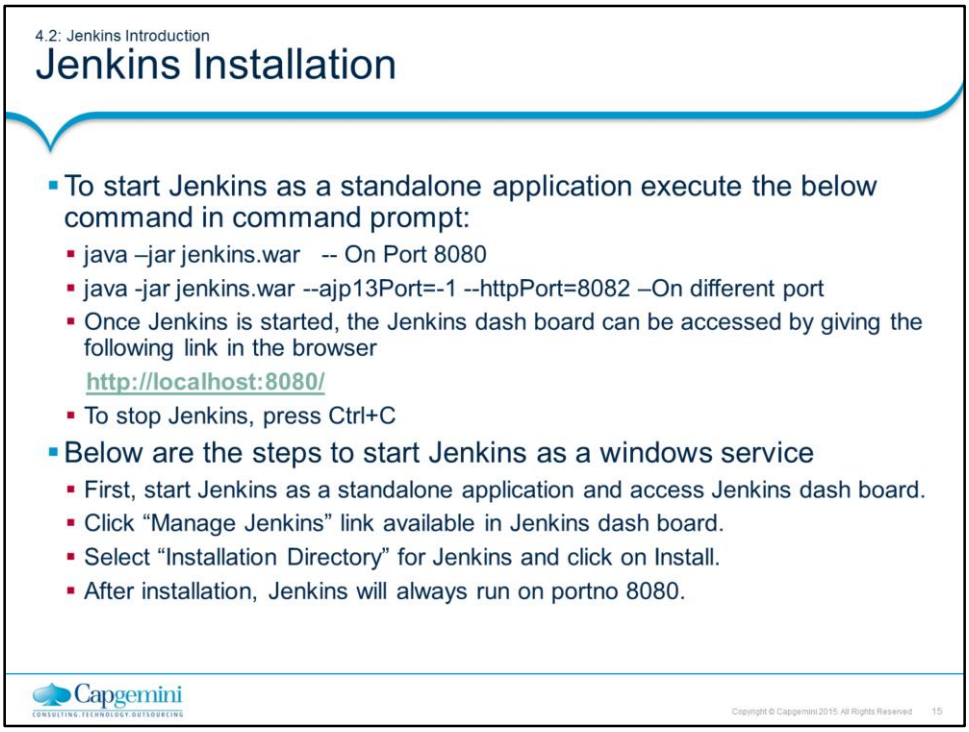
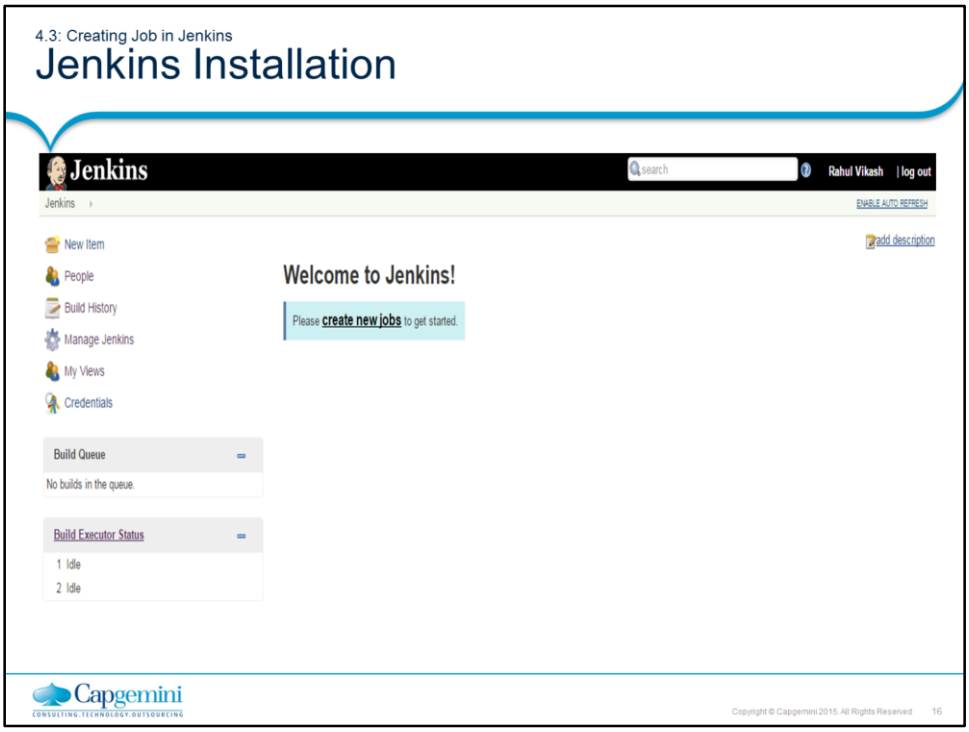


By default, Jenkins will run on the 8080 port. To specify the port manually, use the --httpPort option:

java -jar jenkins.war --httpPort=8081

Instructor Notes:



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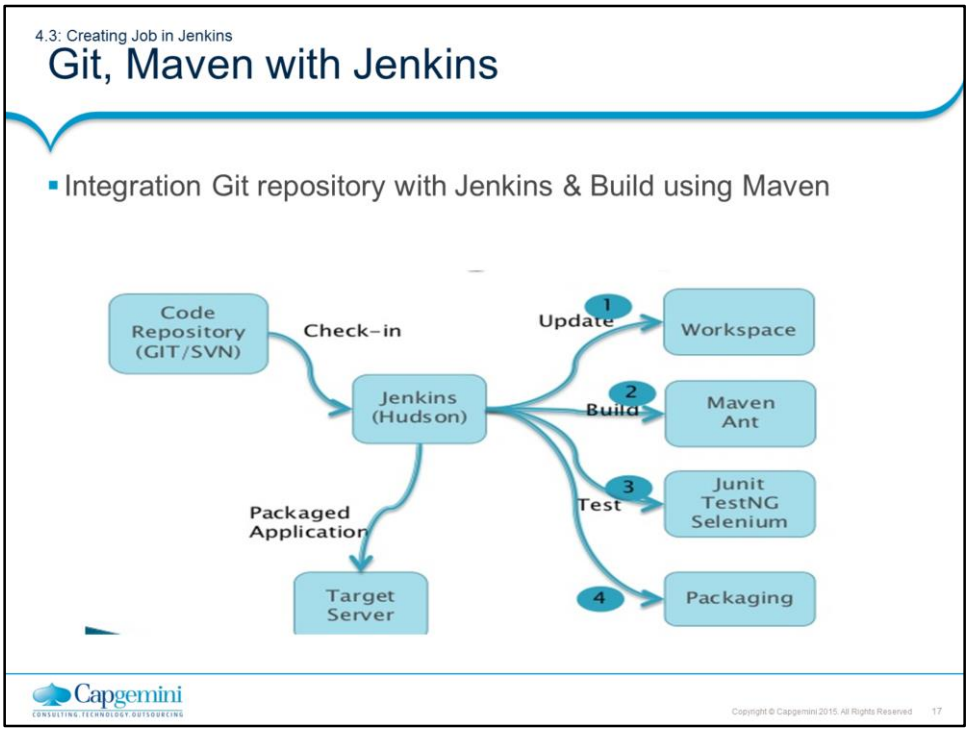

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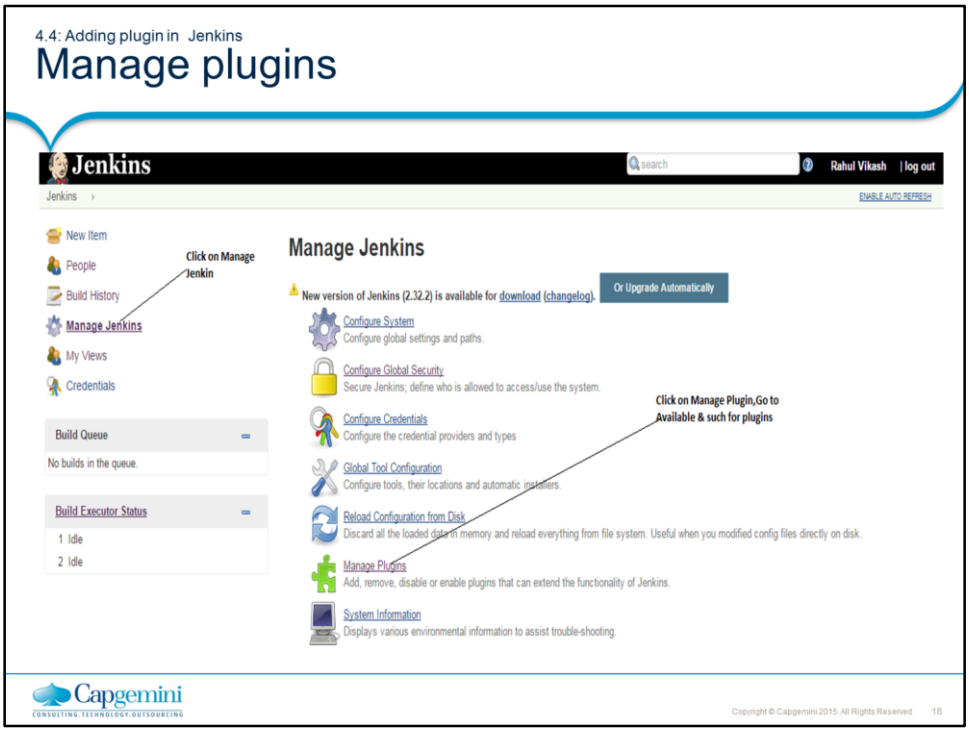

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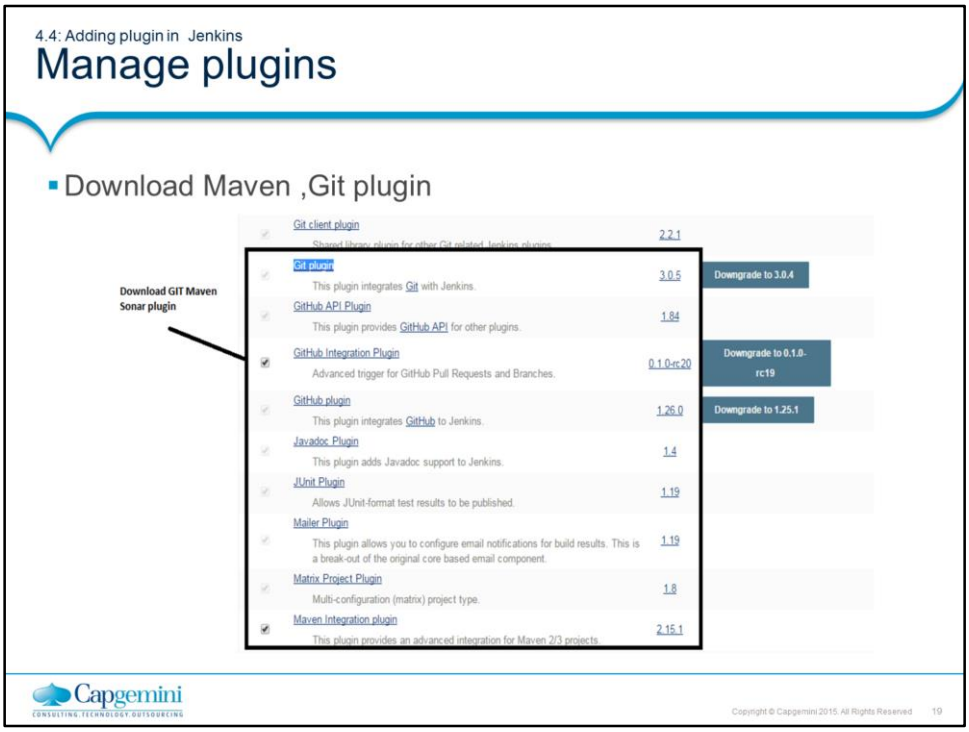

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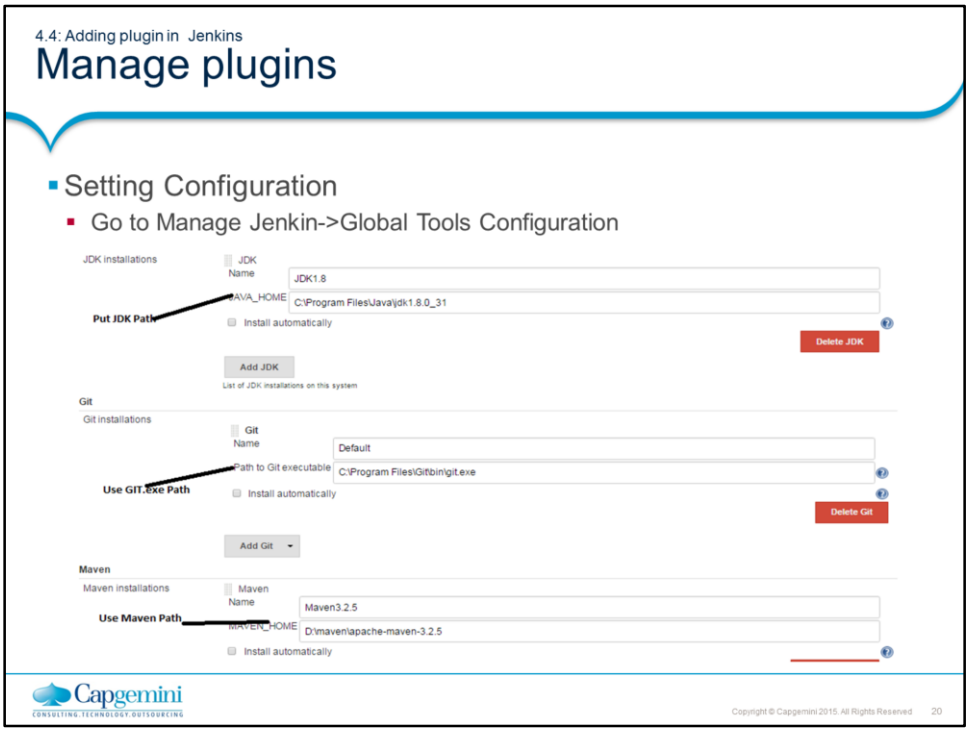

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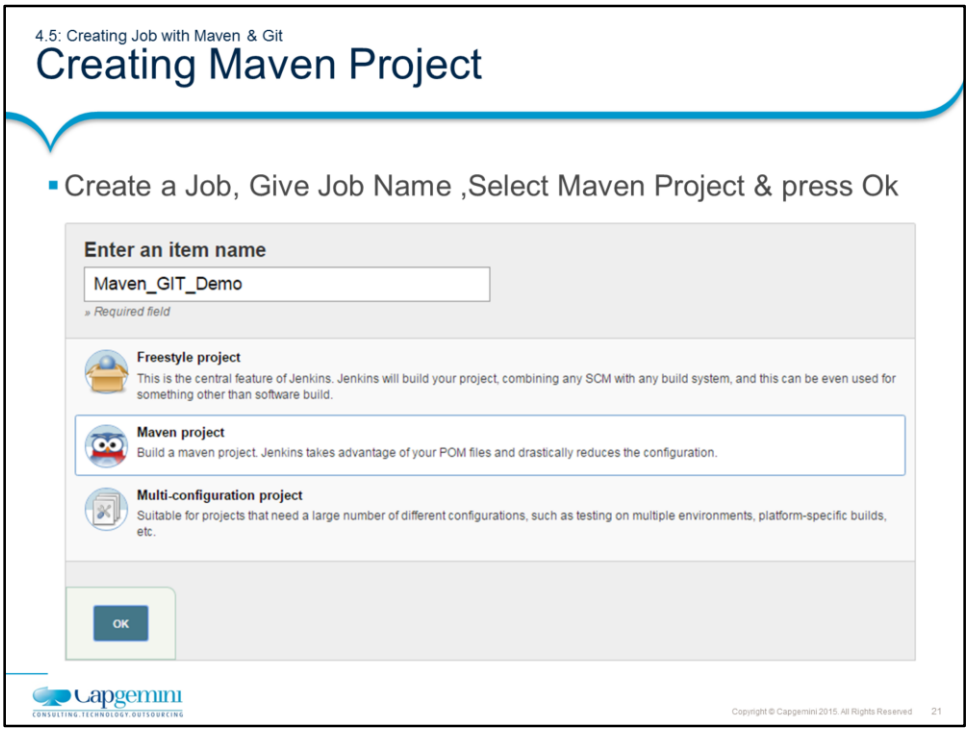

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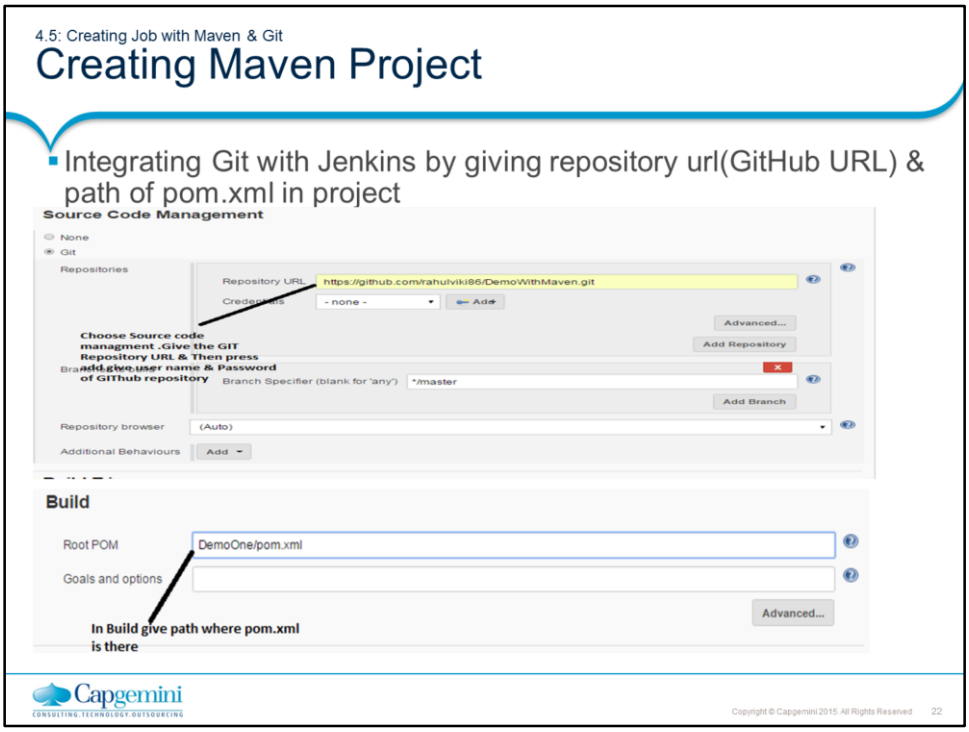

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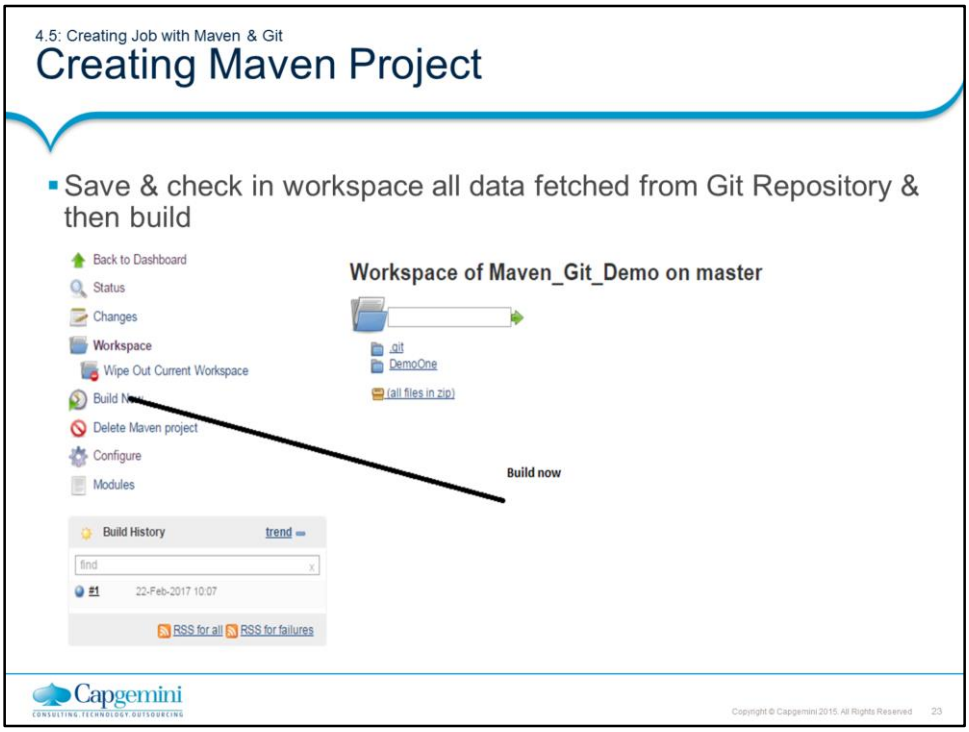

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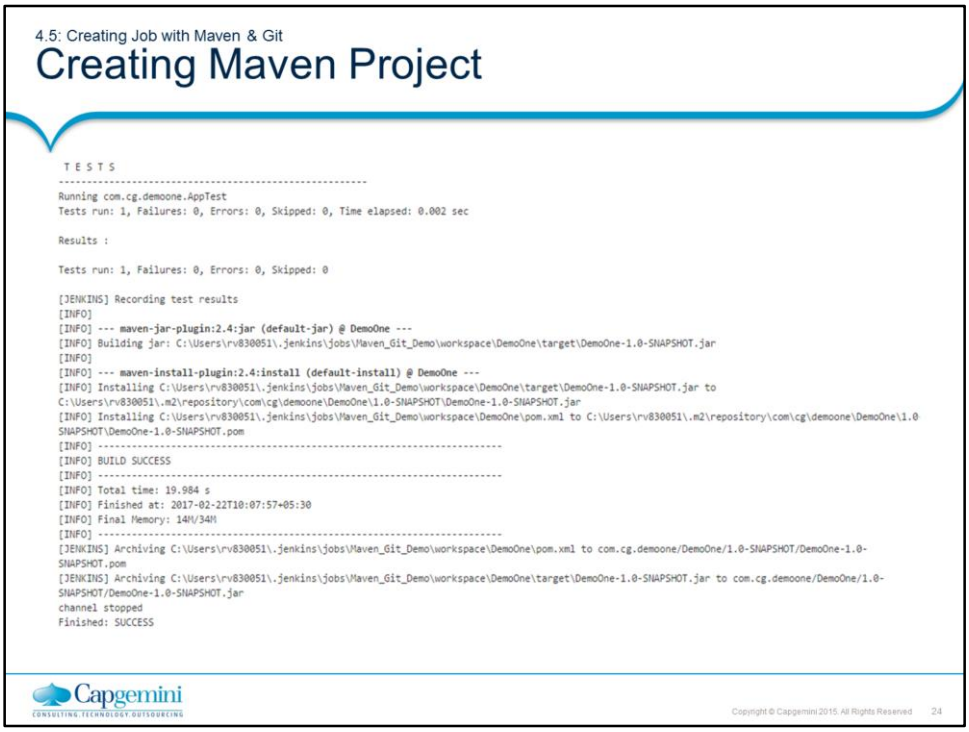

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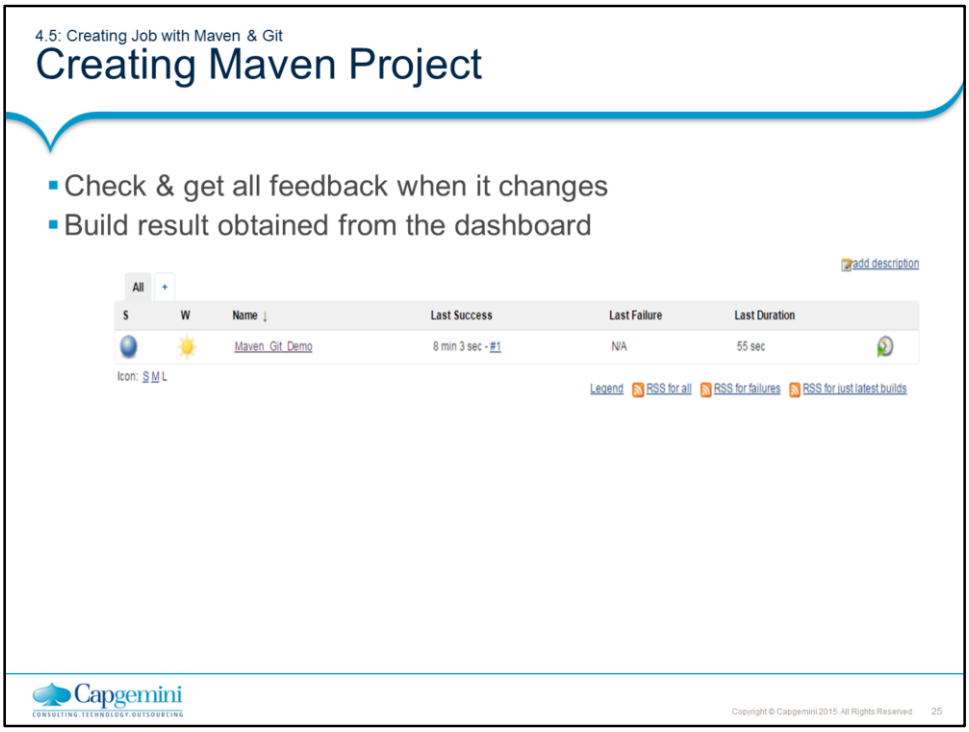

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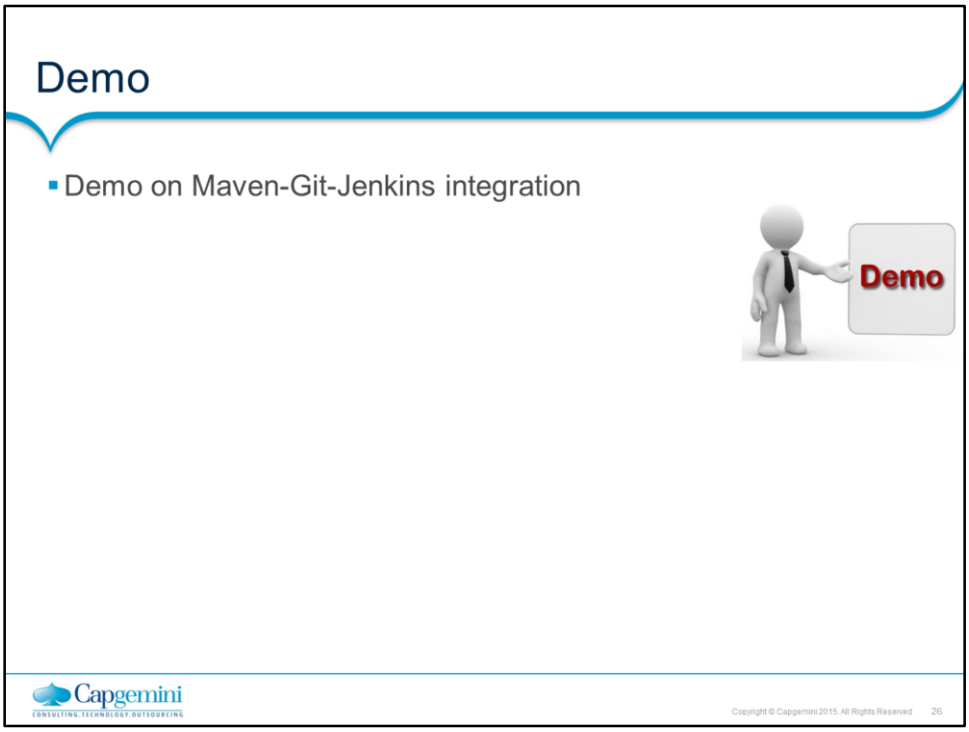

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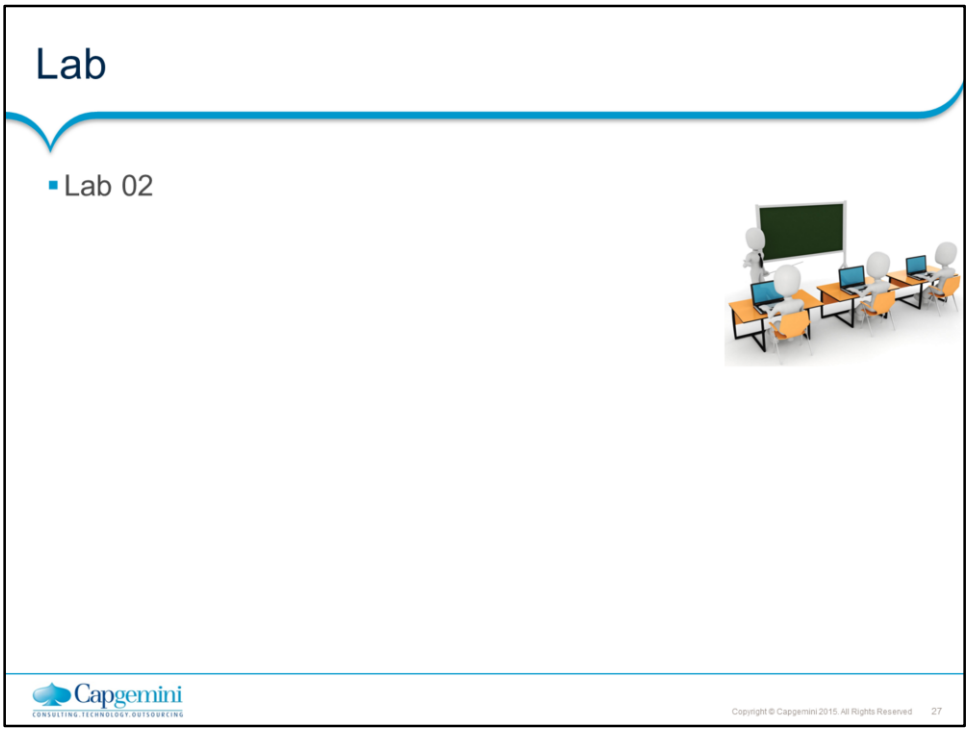

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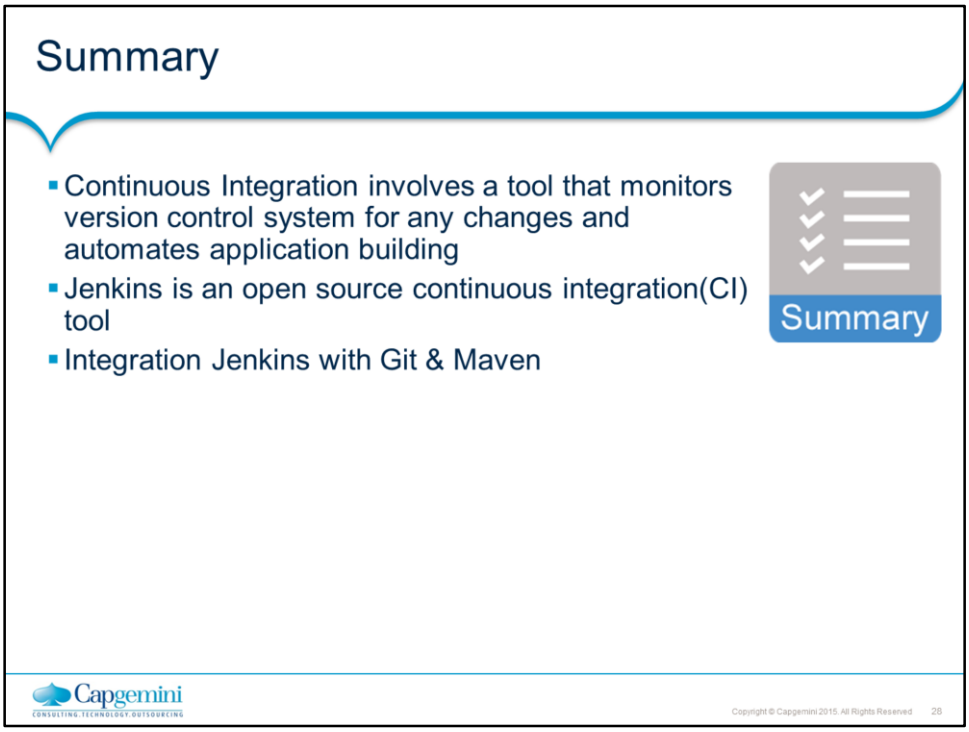

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Instructor Notes:

Q1 Continuous Integration provides solutions to the testers for the failed test cases.

Review Question

- Which of the given statement is not correct for Continuous Integrations?
  - Continuous Integration is about reducing the risk by providing faster feedback.
  - Continuous Integration involves a tool that monitors version control system for changes.
  - Continuous Integration provides solutions to the testers for the failed test cases.
  - Continuous Integration helps End user to the testers and the end users faster, more reliably, and with less efforts.
- Which command execution will start Jenkins as a standalone application?
  - jenkins.war
  - java -jar jenkins.war

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Instructor Notes:

Q1 Continuous Integration provides solutions to the testers for the failed test cases.

Q2. java -jar jenkins.war

Q3 Continuous Deployment

Review Question

- java jenkins.war
- None of the above
- _____ is the process of deploying the latest code into production.
  - Build job
  - Continuous Deployment
  - Continuous Testing
  - None of the above

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