

Maintenance of Continuous Integration Environments

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Agenda

1. Definitions

2. Setup

3. Questions

4. Requirements

5. Process for Updating

6. Typical Setup

7. Setup Requirements

8. Solution

9. Software / CI

10. Project

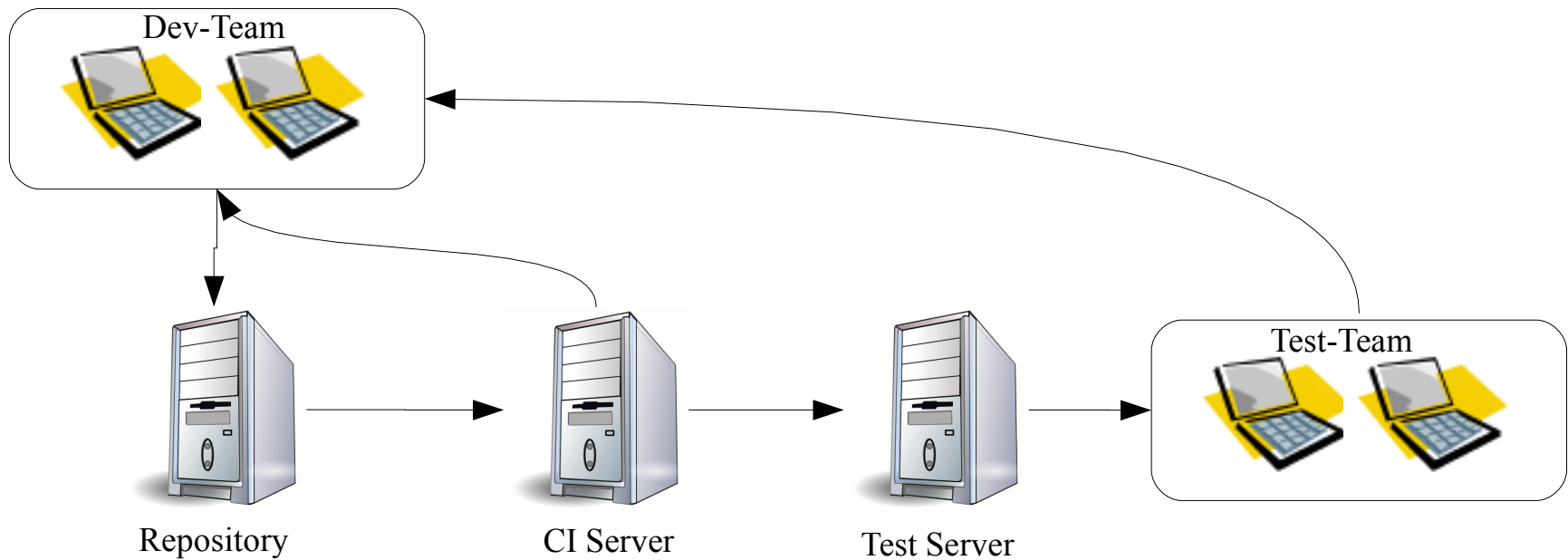
1. Definition

-Continuous integration is the process of assembling software everytime code changes. CI Helps to „Integrate Early, Integrate Often“ reducing the lifespan of a defect.

- Compiling, linking, running your unit tests, install the software and run integration tests.

- source: <http://www.slideshare.net/thyagk/continuous-integration-system>

2. Setup for CI Env.



3. Question

- How many continuous integration (CI) systems do you have?
 - 1
 - > 2
 - > 5
 - > 10
 - > 20
 - more ?

3. Question

- How did you installed your CI systems?
 - Hand configured until it runs
 - Via existing packages (like RPM's)?
 - Other ways?

3. Question

- What about updates in your CI environments?
 - Bug Fixes or enhancements of CI tools
 - Maven, Plugins, new tools etc.
- Do you have a process for updating CI environments?

4. Requirements for CI Env.

- Your CI environment is in **production** state before your software is !
 - Must be very realiable.
 - Must be reproducible in long term view.

5. Process for Updating CI Env.

- Development
- Testing
- Production

6. Typical Setup

- 10 CI Environments
 - trunk builds
 - release builds
 - special branch builds
 - Integration lines
 - Particular environments
 - etc.

6. Typical Setup

- Hudson as CI tool.
- Maven as build tool.
- May be other supplemental tools.
- Nexus (or other Repository Manager like Artifactory or Archiva).

7. Setup Requirements

- Hudson should be reachable via URL (default port) and not via URL:8080/hudson etc.
- Separate User for Hudson
- Tools should be installed under Hudson user.
- All installations via RPM's only.

7. Setup Requirements

- Nexus should be reachable via URL (default port) and not via URL:8080/nexus etc.
- Separate User for Nexus

7. Setup Requirements

- Chicken and egg problem
 - The first CI setup must be done by hand and can later be replaced by a more „defined“ one.
 - Can also be achieved by building the first one on a local machine ;-(

8. The Solution

- Use Maven to solve the problems cause many components are already available as Maven artifacts.

8. The Solution

- Hudson is available as Maven artifact.
- Plugins are available as Maven artifacts as well.
- Maven itself is available as Maven artifact.
- Nexus is available as Maven artifacts.

8. The Solution

- RPM List

- Hudson User
- Maven Configuration for Hudson User
- Tools like Maven, may be in different releases:
 - 2.2.1
 - 3.0

8. The Solution

- RPM List
 - Hudson Configuration
 - Hudson Tomcat
 - Hudson WAR
 - Hudson Plugins

9. Software / CI

- How to get the relationship of the produced software and the CI?
 - Create an appropriate structure
 - for example like the following:
 - project
 - trunk
 - src
 - doc
 - cienv

10.Project

- GitHub

- <http://github.com/khmarbaise/CIEnv>

On-line Sources

- Maven
 - [Maven Build Tool](#)
 - [Maven](#)
 - [Hudson CI Tool](#)
- Continuous Integration
 - [Continuous Integration](#)
 - [CI Best Practice](#)
 - [Sonar CI](#)

Questions?

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- Thank you for your attention.