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.
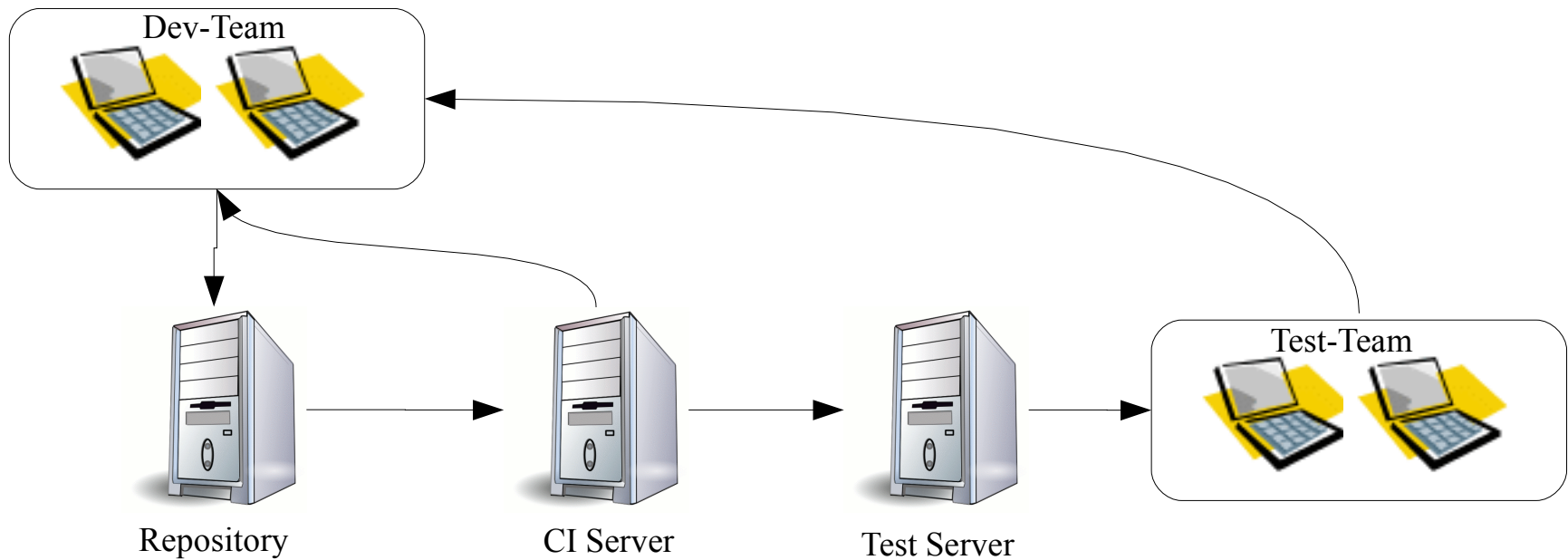
3. Question

- 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 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.