

1 Things You Might Not Know About

Continuous Integration

by Jeffery Payne

- 1** **THE NAME SAYS IT ALL.** Continuous integration (CI) is the process of continually integrating your software to assure that any software issues are eliminated as early as possible during software development. Effective CI heavily leverages automation.
- 2** **CI BUILDS QUALITY IN.** CI not only automates your software build process but it also is the building block for your testing process. Done right, CI moves software testing earlier in the software development process and dramatically increases your testing capability.
- 3** **AGILE WON'T WORK WITHOUT CI.** Agile development is all about reducing the cost of change for your requirements, design, and code. Rapid, iterative development only works when integration and quality issues are dealt with as soon as they arise. CI assures that happens.
- 4** **CI ISN'T JUST FOR AGILE.** Successful integration of software is critical to any software development project. Too often, integration of code across team members or separate development teams is done late in the lifecycle, when the cost to correct issues is significant. Even if you are not doing two-week development cycles, use CI to more frequently build and test what has been developed to date.
- 5** **OPEN SOURCE TOOLS ARE MATURE.** The difference between open source and commercial tools is often substantial. Not so for continuous integration. There are many very mature open source solutions that can significantly reduce your costs of leveraging CI.
- 6** **CI HOLDS TEAMS ACCOUNTABLE FOR QUALITY.** CI systems can be configured to notify the development and testing teams when a build or set of tests fail. This makes visible to everyone on the team when there is a problem and who is responsible for correcting it. Team members will hold each other (and themselves) accountable when it's clear where software issues are coming from.
- 7** **CI HELPS SECURE APPLICATIONS.** Integrating automated secure code analysis and security testing into CI provides an easy mechanism to start getting development and testing teams to understand and address security issues. Make sure you provide some security expertise to these teams to help them review security results and figure out how to remediate any vulnerabilities.
- 8** **CI INCREASES PROJECT VISIBILITY.** CI done right generates a lot of information on the progress being made toward a successful release. Savvy project managers use this information to keep their business sponsors informed on project progress. You will find that this significantly reduces the effort of managing your business customer.
- 9** **CI HELPS INTEGRATE DEVELOPMENT AND TEST TEAMS.** CI is the perfect integration point for development and testing teams during development. Have your test lead involved in the setting of pass/fail criteria not only for his testing activities but also for the unit tests developed by software engineers. You will also find that your test teams can help developers significantly improve their unit testing skills.
- 10** **CI WORKS ACROSS PRODUCTS.** Large-scale programs comprising many interconnected projects greatly benefit from CI. Develop an approach that assures your entire program goes through a frequent integration process, and you will see a significant reduction in defects.