



ST. LOUIS DAY OF DOT NET

Automating Development Processes with Open Source Tools

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What is Continuous Integration?

- Team members integrating work **frequently**
- Automate build and build related tasks
 - Important but tedious tasks

Why Continuous Integration?

- Reduce integration problems
- Find errors early
- Enforce best practices
- Increase team communication/awareness
- **Develop better software faster**

Local Environment

➤ Your machine

- Application development environment
 - This is where the magic happens.
- Source control client
 - Backup code
 - Collaborate with your team
 - Branch your project

Source Control Server

- Assuming (client/server model)
- The definitive source for your app

Build Server

- Can be the same as source control server
- Clean and consistent environment
 - Not exposed to frequent changes like a developer's environment

Build Server

- Fundamental features
 - Builds application
 - Report success or failure
 - Report detailed built output

Build Server

- Additional (optional) tasks
 - Email notifications
 - Code metrics / static analysis
 - Run automated tests
 - Deploy application

Without Continuous Integration...

- How do you push changes to the test environment?
- How do you notify QA?
- A team member checks in bad code right before they leave. Ah crap...

So how do we do it?

- We have lots of options
- I just happened to pick:
 - Subversion for source control
 - Cruise Control .NET for CI

Source Control with Subversion

- Open Source Development
- Large and Active Community
- Client Server Model
- Well established
- Wide community support and compatibility

Setting up Subversion

- Svn1clicksetup
 - Installs SVN client and server
 - Installs TortoiseSVN
- TortoiseSVN
 - Windows Shell Extensions
- AnkhSVN
 - Visual Studio Integration

Subversion + Visual Studio Project

DEMO

What is Cruise Control .NET?

- Automated integration server
- Monitoring and reporting
 - Monitors project repository
 - Integration builds launched on commit/check-in
 - Developer notification
 - Integration with other tools to perform additional tasks

Setting up the basics

- Monitor source control repository
- Trigger a build event



Rudimentary CruiseControl.NET Setup

DEMO

Custom project build scripts

- Several options
 - MSBuild or NAnt?
- Common tasks
 - Packaging
 - Deployment

Custom Build Script

DEMO

CC.NET Additional Integration Options

➤ Source Control

- Subversion
- CVS
- Visual Source Safe
- SourceGear Vault
- StarTeam
- **+ many more**

➤ Build Tools

- NAnt
- Visual Studio
- MSBuild
- FinalBuilder

CC.NET Additional Integration Options

➤ Test + Coverage

- NUnit
- MSTest
- NCover
- MBUnit
- FitNesse

➤ Metrics

- FxCop
- Vil
- Simian
- NDepend
- Gendarme

SVN Additional Integration Options

- Software collaboration sites
 - Codeplex
 - Host and collaborate on open source projects
 - Unfuddle
 - Track bugs and feature requests
 - Subversion repository hosting

Resources

- Continuous Integration
 - [Continuous Integration \(Martin Fowler\)](#)
 - [Why use Continuous Integration? Beginner's Overview \(Scott C Reynolds\)](#)
- Subversion
 - [Subversion Home Page](#)
 - [svn1clicksetup Home Page](#)
 - [TortoiseSVN Home Page](#)
 - [AnkhSVN Home Page](#)
 - [Setting up Subversion \(Rick Strahl\)](#)
 - [Subversion Quick start for .NET Developers \(Polymorphic Podcast\)](#)
- Cruise Control .NET
 - [CruiseControl.NET Home Page \(Great Documentation!\)](#)
 - [CruiseControl with MSBuild, MSTest, Devenv \(Gaurav R\)](#)
- NAnt
 - [NAnt Home Page](#)

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