TEAM FOUNDATION SERVER 2010 ADVANCED TOPICS

ADV2010 | 2 Days

INTRODUCTION

This two-day, instructor-led course dives deep into the areas of process template customization, version control, parallel development and Team Foundation Build. It provides students with the knowledge and skills to effectively customize process templates, understand the advanced usage of the version control and check-in policies in a parallel development environment, and how to customize and leverage Team Foundation Build. The course also includes many best practices and solutions to common problems in Team Foundation Server 2010.

AUDIENCE

This course is intended for students who have a working-knowledge of Visual Studio 2010 and Team Foundation Server 2010, or who have attended comparable training classes.

AT COURSE COMPLETION

After attending this course, students will be able to:

- Understand the architecture of a process template
- Modify an existing process template
- Create and alter work item types
- Use global lists to share selection data between fields and team projects
- Understand parallel development
- Understand Team Foundation Server's support for parallel development
- Select an appropriate branching strategy
- Setup an appropriate folder and branch structure
- Setup and manage workspaces
- Use branching and merging effectively
- Use shelving and unshelving effectively
- Detect and resolve conflicts
- Visualize branch hierarchies and changeset merges
- Secure version control folders and files
- Use alternate compare and merge tools
- Use the TF command line utility
- Use the TF Rollback command
- Install and use the MSSCCI provider
- Use work item, code analysis, and testing check-in policies
- Manage check-in policy failure and overrides
- Create and deploy a custom check-in policy
- Understand Team Foundation Build controller and agent architecture
- Setup a pool of build agents
- Configure build notifications
- Automate testing and code analysis as part of an automated build
- Use gated check-ins and private builds to protect against breaking changes
- Publish debugging symbols during an automated build
- Create a custom build process template
- Create a custom workflow activity
- Create a custom MSBuild task (optional)

PREREQUISITES

Before attending this course, the student should have experience with Team Foundation Server 2010. Additionally, students should:

- Have familiarity with their organization's software development process
- Have experience developing and supporting multiple versions of a software project
- Have experience working with multiple developers on a software project
- Have experience with the types of conflicts that can arise from a multi-developer project
- Have familiarity with distributed application design (i.e. client/server, web, n-tier, etc.)
- Be able to read and understand C# .NET code (all source code will be provided)
- Understand Microsoft Windows operating system and security basics

COURSE OUTLINE

Module 1: Customizing Process Templates

This module introduces process templates and the tools and techniques to customize and tailor them for a team's specific needs.

Lessons

- Customizing vs. extending
- Process template architecture
- Modifying a process template
- Work item type schema
- Customizing work item types
- Configuring work item states and transitions (workflow)
- Using global lists

Lab Exercises

- Create a team project for managing TFS customization
- Download and explore a process template
- Modify the process template
- Upload and test a process template
- Create a new process template
- Implement a global list
- Alter work item types for an existing team project
- Use the Team Foundation Power Tools Process Editor

Module 2: Parallel Development

This module offers an advanced discussion of Team Foundation Version Control, focusing on the topics related to multiple users working on multiple, sometimes concurrent, projects and project versions in an agile environment. The topics in this module cover branching, merging, shelving and detecting/mitigating conflicts when they occur.

Lessons

- Introduction to parallel development
- Branching, promotion and locking models
- Branch, merge, shelve and unshelve operations
- Conflict detection and resolution
- Securing version control folders and files
- The TF.exe command line utility
- Team Foundation Server Power Tools
- Alternate compare and merge tools
- The MSSCCI provider

Lab Exercises

- Create version control folders, branches and workspaces
- Branch code, merge changes and visualize hierarchies
- Detect and resolve conflicts
- Perform a baseless merge using TF.exe
- Rollback changes using TF.exe
- Secure artifacts in version control
- Shelve and unshelve changes
- Install and use the MSSCCI provider (optional)
- Install and use an alternate merge tool (optional)

Module 3: Check-In Policies

This module continues the deep dive into Team Foundation Version Control, focusing on ensuring the quality of the checked-in artifacts. The topics in this module include using the built-in policies to run tests, code analysis and verify work item association, as well as creating and using custom check-in policies.

Lessons

- Ensuring changes are properly implemented
- Configuring check-in policies and notes
- Team Foundation Server Power Tools policy-pack
- Understanding policy failure, overriding and managing overrides
- Creating, deploying and debugging a custom check-in policy

Lab Exercises

- Configure the work item association check-in policy
- Configure the code analysis check-in policy
- Migrate code analysis policy settings to Visual Studio projects
- Create a unit test and managing test lists
- Configure a unit testing check-in policy
- Using Test Impact Analysis with the testing policy
- Use the Custom Path policy to scope other check-in policies
- Create, deploy and debug a custom check-in policy (optional)

Module 4: Team Foundation Build

This module includes a deep dive into Team Foundation Build, including a more technical look into the architecture and execution process. Topics include understanding MSBuild and customizing and automating Team Foundation Build.

Lessons

- Team Foundation Build architecture
- Controllers, agents and pooling
- Securing the build process
- Automating Team Foundation Build
- Implementing Continuous Integration (CI)
- Builds check-in policy
- Gated check-ins and private builds
- Publish debugging symbols
- Customizing Team Foundation Build
- Using build process templates
- Customizing Windows Workflow-based build definitions
- Creating a custom Windows Workflow activity
- Customizing MSBuild-based build definitions
- Creating a custom MSBuild task

Lab Exercises

- Setup build controller and build agents
- Create an automated build definition
- Configure build notifications
- Ensure a quality build by enabling code analysis
- Ensure a quality build by running automated tests
- Configure a gated check-in build
- Configure a private build
- Configure the build to publish debugging symbols
- Create a custom build template
- Customize a Windows Workflow-based build definition
- Create a custom Windows Workflow activity (optional)
- Customize an MSBuild-based build definition (optional)
- Create a custom MSBuild task (optional)

Course Designer

This course was designed by Richard Hundhausen of Accentient, Inc. Richard is a Visual Studio ALM MVP and Microsoft Regional Director, as well as an experienced developer and trainer.

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