

LEVERAGING MSBUILD 4.0

MSB2010 | 1 Day



INTRODUCTION

This one-day, instructor-led course provides students with the knowledge and skills to understand, utilize, customize, and troubleshoot Microsoft MSBuild 4.0.

AUDIENCE

This course is intended for software developers, configuration managers, and build engineers who are responsible for building managed .NET or native Visual C++ 2010 applications.

PREREQUISITES

Before attending this course, students should have:

- Familiarity with developing and building software
- Familiarity with Visual Studio 2005, 2008, or 2010
- **Familiarity with their organization's development process**
- Be able to read and understand C# and C++ code (all source code will be provided)

COURSE OUTLINE

MODULE 1: MSBUILD 4.0 BASICS

This module introduces MSBuild, including what it does, how it works, and how to use it.

Lessons

- What is MSBuild
- Sample project files
- Solutions vs. projects
- Targets and Tasks
- Properties and Items
- Editing projects with Visual Studio 2010

Lab

- Setup the learning environment
- Explore MSBuild
- Use MSBuild to build an application
- Use Visual Studio to edit an MSBuild file

MODULE 2: VISUAL C++ SUPPORT

This module focuses on how MSBuild supports the Visual C++ 2010 build process.

Lessons

- Anatomy of the .vcxproj file
- Migrating from earlier versions
- The Visual C++ build process
- Tasks specific to Visual C++
- Project-level build parallelism
- File-level build parallelism
- Incremental Builds
- Property Sheets and Pages
- Directories

Lab

- Explore a Visual C++ project file
- Convert a Visual C++ 2008 project
- Configure and run an incremental build
- Configure and run a project-level parallel build* (optional)
- Configure and run a file-level parallel build* (optional)

** These exercises will be more impactful when run on multi-core machines*

MODULE 3: CUSTOMIZATION

This module introduces the many ways you can customize and extend MSBuild.

Lessons

- Build Events
- Custom build steps
- Custom build tools
- Custom build targets
- Custom build tasks
- MSBuild extension pack

Lab

- Explore build events
- Create a custom build step
- Use a custom build tool
- Work with custom targets
- Install and use the MSBuild extension pack (optional)
- Create and use a custom target (optional)

MODULE 4: TROUBLESHOOTING

This module provides the student with many tools and tricks to be used when troubleshooting a slow or otherwise misbehaving build.

Lessons

- Logging
- Logging verbosity
- Console logger
- File logger
- Custom loggers
- Handling errors
- Debugging MSBuild using Visual Studio
- Debugging MSBuild using [MSBuild Sidekick by Attrice](#)
- Debugging tasks and loggers
- Troubleshooting multiple import issues
- Troubleshooting performance issues
- Troubleshooting incremental build issues

Lab

- Use the console and file loggers
- Use the /preprocess switch
- Generate a performance summary
- Generate a detailed summary
- Explore MSBuild Sidekick (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.

For more information, visit www.accentient.com