Custom
TRAINING INSTITUTE

.NET Tuning, Debugging and Optimization (4 Days)

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.NET Tuning, Debugging and Optimization (CTI 404)

This course provides the experienced programmer with techniques for debugging and optimizing .NET programs. Also covered are tuning applications after they have been deployed.

Prerequisites: The student should be an experienced .NET application developer.

Minimum software requirements: Microsoft Visual Studio.NET 2003Enterprise Edition on Windows 2000 or XP. Internet Information Services should be installed.

Minimum hardware requirements for all machines: Pentium PC running at 500 MHz; 512 Mb RAM; 3 GB free hard disk space before installation; Internet access; machines must be networked.

Microsoft PowerPoint and Internet access on instructor's workstation for presentation purposes.

Module 1: Overview of .NET Debuggers
- Compile-time Errors and Run-time Errors
- Configuring Debug, Release, and Special Builds
- Visual Studio .NET Debugger
- The Windows-based DbgCLR Debugger
- The CorDbg Command-line Debugger
- Just-In-Time Debugging

Module 2: Error and Exception Handling
- Using Exception Handlers
- Checked Integer Arithmetic
- The Exceptions Dialog Box
- The $exception Pseudovariable
- User Defined Exceptions
- Best Practices in Exception Handling

Module 3: Debugging and Tracing
- Attaching to Processes
- Tracing
- Event Logs

Module 4: Debugging Web Forms Applications
- Enabling ASP.NET Debugging
- Debugging Web Forms Applications Using Visual Studio
- Debugging Web Forms Applications Using .NET SDK
- Tracing and Event Logs with ASP.NET
- Debugging Client Scripts

Module 5: Debugging Web Services
- Enabling Web Services Debugging
- Debugging Web Services Using Visual Studio
- Debugging Web Services Using .NET SDK
- XML Serialization Issues
- HTTP Headers Issues

Module 6: More About Tracing
- Using the BooleanSwitch and TraceSwitch Classes
- Print Debugging Information with the Debug Class
- Instrumenting Release Builds with the Trace Class
- Using Listeners
- Implementing Custom Listeners

Module 7: Fundamentals of Optimization
- Compiler Optimization
- Performance Measurements
- Responsive User Interfaces
- Multithreaded Windows Forms Applications
- Best Practices for High Performance

Module 8: Application Profiling
- Profiling Techniques
- Tracing and Instrumenting an Application
- Using Performance Counters
- Resource Utilization Profiling
- Profiling Code Hotspots

.NET Tuning, Debugging, and Optimization (CTI 404) - continued

Module 9: Optimizing ASP.NET Applications and Web Services

- Caching in ASP.NET
- Monitoring ASP.NET Application Performance
- Using Microsoft Application Center Test (ACT)
- Best Practices for High Performance

Module 10: Remote Debugging

- Remote Debugging Setup
- Debugging Windows Forms Programs Remotely
- Debugging Web Applications and Services Remotely

Module 11: Tuning

- Configuration Files in .NET
- Tuning Windows Forms Configuration Files
- Tuning ASP.NET Configuration Files

Appendix A: Mixed-Mode Debugging