Deploying Microsoft .NET Applications for Systems Engineering
Course No. MS2362 • 3 Days

► COURSE OVERVIEW
This three-day instructor-led course teaches System Engineers how to deploy .NET applications and the .NET Framework, using different deployment techniques. It includes the basic architecture of .NET applications and how to secure, monitor, and maintain them.

► AUDIENCE
The typical audience for this learning product is a skilled System Engineer with at least three years of network and server management experience.

► OBJECTIVES
Upon completion of this course, you will be able to:
- Describe what the Microsoft .NET Framework components are and how they work together.
- Describe the elements of and best practices for securing .NET applications.
- Configure .NET application security, including code-access and role-based security, using guidelines for best practices.
- Describe the different deployment mechanisms for a .NET application.
- Deploy applications built on the Microsoft .NET Framework using a variety of methods.
- Update components of an application built on the .NET Framework.
- Describe the elements of managing .NET assemblies.
- Deploy .NET assemblies.
- Configure ASP.NET applications and Enterprise Services.
- Monitor .NET applications, including the use of the Enterprise Instrumentation Framework (EIF).

► PREREQUISITES
- Experience with Microsoft Windows® 2000 Server and/or Microsoft Windows Server™ 2003
- Experience with Microsoft Active Directory
- Experience with TCP/IP including DHCP, DNS, etc.

► COURSE OUTLINE
Module 1: Introduction to the .NET Framework
This module describes the .NET Framework components and how they work together. It also describes the architecture of a .NET application and how it relates to various other systems including Microsoft Active Directory directory service, the operating system, IIS, COM+, and other services. Overall, it identifies when the .NET Framework and .NET applications will and will not affect common existing operational procedures including development, packaging and deployment, testing and monitoring.

Topics:
- Life after .NET
- .NET Framework Components
- .NET Framework Components and .NET Applications
- The Role of the Global Assembly Cache (GAC)
- Communications Between .NET Applications and Services

Module 2: Implementing a .NET Application Security Strategy
This module identifies the security layers that are built into the .NET Framework and describes guidelines for implementing .NET application security.

Topics:
- Identifying .NET Framework Security Layers
- Applying .NET Security Principles

Module 3: Configuring .NET Application Security
This module describes how to configure code access and role-based security for .NET applications. Application security must be configured before an application can be deployed.

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- Configuring Code Access Security
- Configuring Role-Based Security

Lab: Configuring Code Access Security

Module 4: Introduction to .NET Application Deployment
This module provides an overview of installing .NET applications including hardware and software requirements, how to troubleshoot problems that may occur during the installation of applications, and guidelines for interoperation. It will outline the tasks for deploying the .NET Framework and deploying .NET applications by using Xcopy and No-Touch Deployment. It will also stress best practices for packaging and deploying .NET applications.

Topics:
- Options for Deploying the .NET Framework
- Overview of Deploying .NET Applications
- Deploying a .NET Application using XCopy
- Deploying a .NET Application with No-Touch Deployment (NTD)

Lab: Deploying Applications using XCopy and NTD

Module 6: Deploying Automatically-updating .NET Applications
This module will complete the deployment cycle by describing how to deploy .NET applications that will automatically update. It will cover the process for combining NTD and MSI installations and how to use the Application Updater Block. Finally, it will explain the guidelines for best practices for deploying .NET applications that will be automatically updated.

Topics:
- Overview of Automatically-updating Applications
- Deploying and Updating a Smart Client Application
- Deploying and Updating .NET Applications using the Application Updater Block (AUB)

Lab: NTD and Smart Clients

Module 5: Deploying .NET Applications by Using Microsoft Windows Installer (MSI)
This module will build on the previous module to describe specifically how to deploy .NET applications by using Microsoft Windows Installer (MSI). The module will cover how MSI works, what the conditions are for a successful deployment, and how to create desktop icons, menu shortcuts, and create custom actions. It will conclude with best practice guidelines for using MSI.

Topics:
- Microsoft Windows Installer (MSI) Features
- Creating Launch Conditions for an MSI Installation
- Creating Desktop Icons and Menu Shortcuts
- Creating Custom Actions

Lab: Building an MSI Installer Using the Microsoft Visual Studio® .NET Setup

Module 7: Signing .NET Assemblies
In this module, the students will learn how to sign an assembly with a strong name, and use additional signing options to ensure the source of an assembly.

Topics:
- Creating Strong-Named Assemblies
- Identifying Additional Signing Options

Lab: Signing .NET Assemblies

Module 8: Managing .NET Assemblies
This module describes how to manage .NET assemblies by deploying an assembly to the Global Assembly Cache (GAC) and configuring assemblies for side-by-side deployment.

Topics:
- Deploying Assemblies to the Global Assembly Cache
- Configuring Assemblies for Side-by-Side Deployment

Lab: Deploying .NET Assemblies

Module 9: Configuring .NET Components
This module describes how to configure certain .NET Framework components that affect operational

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tasks, including ASP.NET applications, Enterprise Services, and .NET remoting.

Topics:
- Configuring the ASP.NET Process Model
- Configuring .NET Enterprise Services
- Implementing .NET Remoting

Lab: Configuring .NET Components

Module 10: Monitoring .NET Applications
The final module of this course will outline the basics of monitoring .NET applications. It will cover the identification and analysis of common problems with .NET applications and provide hands-on experience with monitoring a .NET application with the Enterprise Instrumentation Framework (EIF). It will also cover testing .NET applications using the Windows Application Compatibility Toolkit (ACT). Finally, it will outline the best practices for monitoring .NET applications.

Topics:
- Monitoring .NET Applications
- Testing Web Applications with ACT

Lab: Instrumentation with EIF