

.NET 10 New Features in 2days

Course Overview

With .NET 10, Microsoft continues to improve performance, stability, and developer productivity across the entire .NET ecosystem. This 2-day training is designed to help developers, architects, and technical teams understand the most important enhancements introduced in .NET 10, C# 14, ASP.NET Core 10, Blazor, Aspire, and related technologies.

The training provides a structured overview of platform updates, language enhancements, web development improvements, authentication advancements, and migration guidance. By the end of the session, participants will have a clear understanding of how to evaluate, adopt, and apply .NET 10 features in real-world projects.

Prerequisites This training is intended for participants who are already working with older versions of **.NET Core / ASP.NET Core** and want to understand the new features, improvements, and migration considerations in **.NET 10**. Participants should have prior hands-on experience with **C#, ASP.NET Core**, and maintaining or developing existing .NET applications.

Training Objectives

By the end of this training, participants will be able to:

- Understand the major enhancements introduced in .NET 10
 - Identify the benefits of upgrading applications to .NET 10
 - Apply new C# 14 language features in day-to-day development
 - Explore updates in ASP.NET Core 10, Blazor, and Minimal APIs
 - Understand new authentication capabilities such as passkeys and WebAuthn
 - Plan migration from .NET 8 or .NET 9 to .NET 10
 - Evaluate which features are most relevant for enterprise adoption
-

Day 1 – .NET 10 Foundations and C# 14 Enhancements

Module 1: Introduction to .NET 10

- Overview of the .NET ecosystem
- What's new in .NET 10
- Why upgrade to .NET 10
- Performance, stability, and developer productivity improvements
- .NET 10 roadmap and LTS relevance
- Key differences from .NET 8 and .NET 9

Module 2: Platform Improvements in .NET 10

- Runtime and SDK enhancements
- Performance improvements
- Stability and diagnostics updates
- Tooling and developer experience improvements
- Impact on existing enterprise applications

Module 3: Deep Dive into C# 14

- Overview of C# 14 language enhancements
- Extension members
- Extension properties
- Field-backed properties using field
- Lambda expression improvements
- Partial member enhancements
- Assignment and syntax enhancements
- How C# 14 improves coding style and readability

Module 4: Applying C# 14 in Real Projects

- Refactoring existing code using new language features
- Writing cleaner and more maintainable code
- Best practices for adopting C# 14
- Compatibility and migration considerations
- Demo and code walkthrough

Module 5: Aspire and Modern .NET Application Development

- Introduction to .NET Aspire
- What's new in Aspire
- Role of Aspire in cloud-native development
- Observability, orchestration, and developer productivity
- Use cases and architecture considerations

Day 2 – ASP.NET Core 10, Blazor, Security, and Upgrade Guidance

Module 6: What's New in ASP.NET Core 10

- Overview of ASP.NET Core 10 enhancements
- Developer productivity improvements

- Web application modernization opportunities
- Key changes for existing ASP.NET Core teams

Module 7: Minimal APIs and OpenAPI Enhancements

- Built-in validation for Minimal APIs
- Improved endpoint development experience
- OpenAPI 3.1 support
- YAML format support
- Server-sent events updates
- API documentation improvements
- Demo and implementation examples

Module 8: Blazor Enhancements

- Overview of new Blazor capabilities
- Declarative PersistentState attribute
- Improved NotFound handling
- Enhanced reconnection experience
- JavaScript interop improvements
- Benefits for interactive web UI development
- Demo and practical scenarios

Module 9: Authentication and Security Updates

- Authentication improvements in ASP.NET Core 10
- Passkey and WebAuthn support
- Improved API authentication defaults
- Modern passwordless authentication concepts
- Security considerations for enterprise applications
- Real-world adoption scenarios

Module 10: Migration and Breaking Changes

- Upgrading from .NET 8 or .NET 9 to .NET 10
- Identifying breaking changes
- Migration planning and risk areas
- Testing and validation strategy
- Recommended upgrade approach for teams

- Common pitfalls and how to avoid them