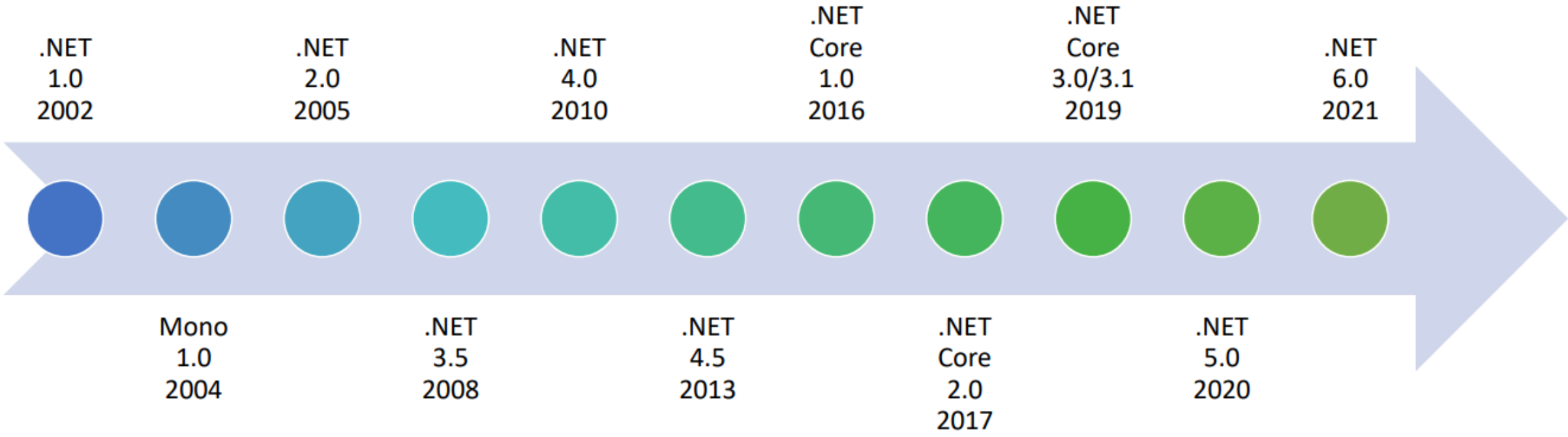
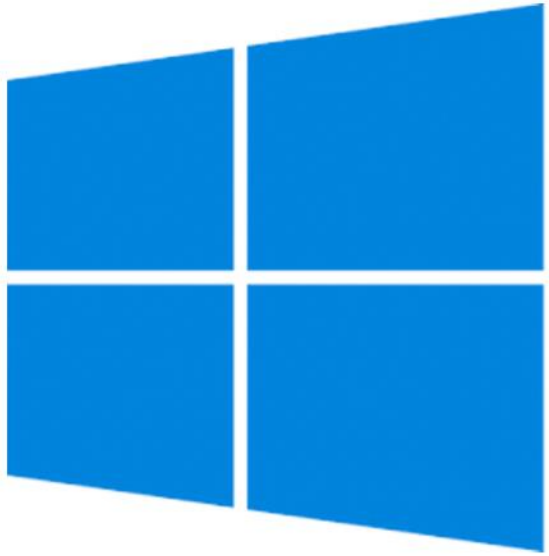
ASP .NET 5.0

History of .NET Platform

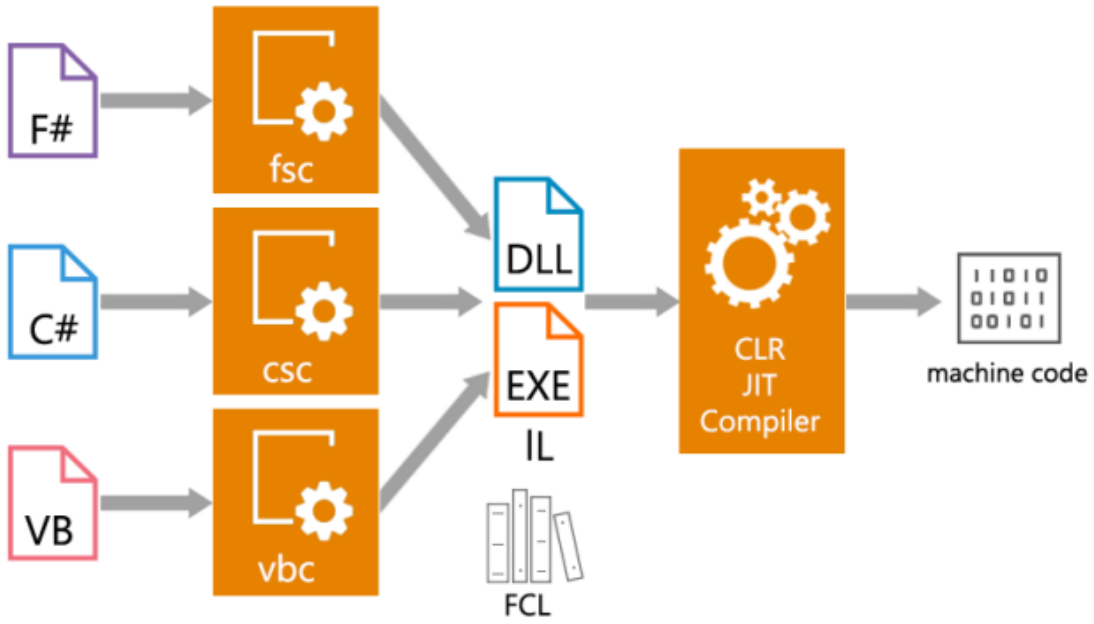


. NET Framework

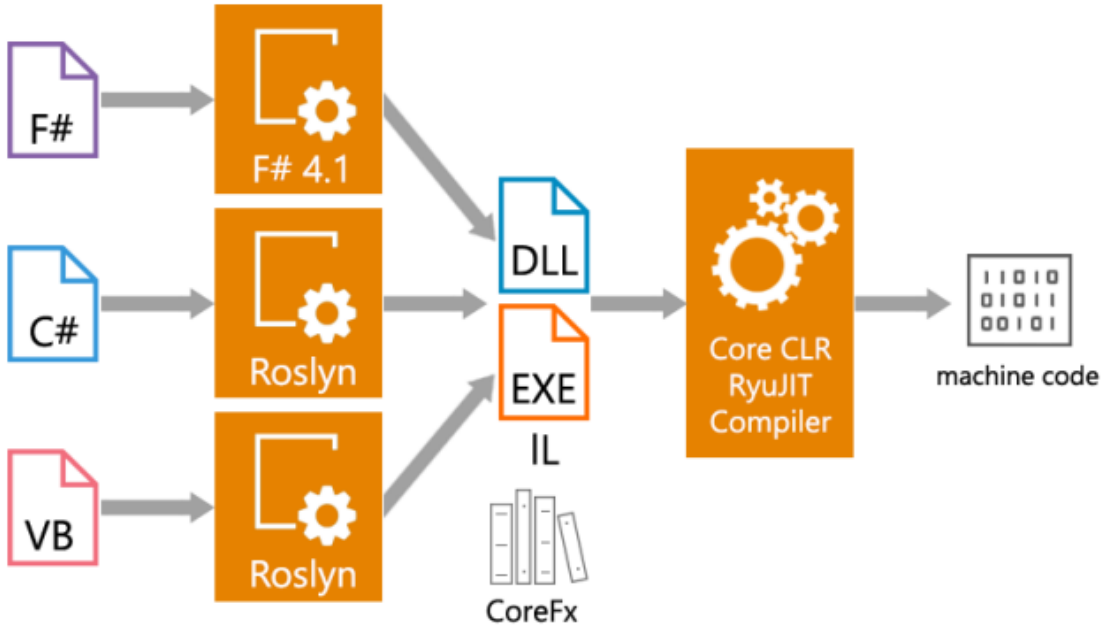


- A development platform for building web applications, services and mobile applications.
- Contains common language runtime (CLR) and the .NET Framework class library that support an extensive range of technologies.
- Runs on Windows OS only.
- The most recent official release of .NET is 4.8.

.NET Compilation



.NET 4.x Compilation



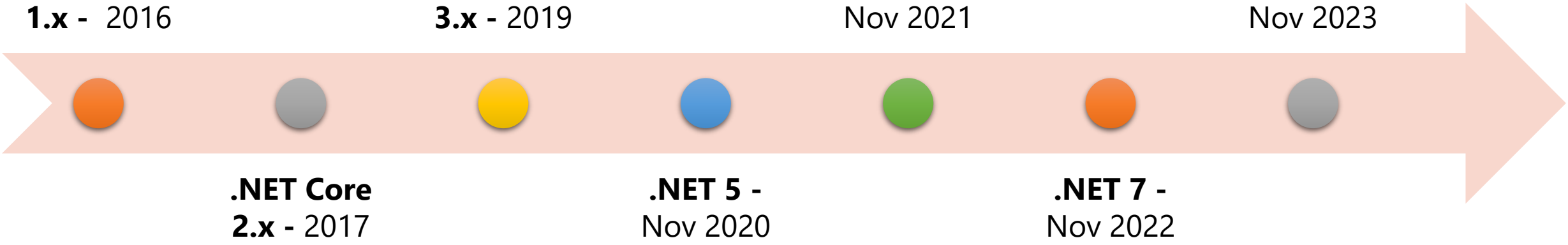
.NETCore/.NET 5 Compilation

What is .NET Core?

.NET Core is a new version of the .NET Framework, which is a free, open-source, general-purpose development platform maintained by Microsoft. It is a cross-platform framework that runs on Windows, Linux, and macOS. .NET Core framework can be used to build different types of applications such as console, desktop, web, mobile, cloud, IoT, machine learning, Microservices, games, etc…

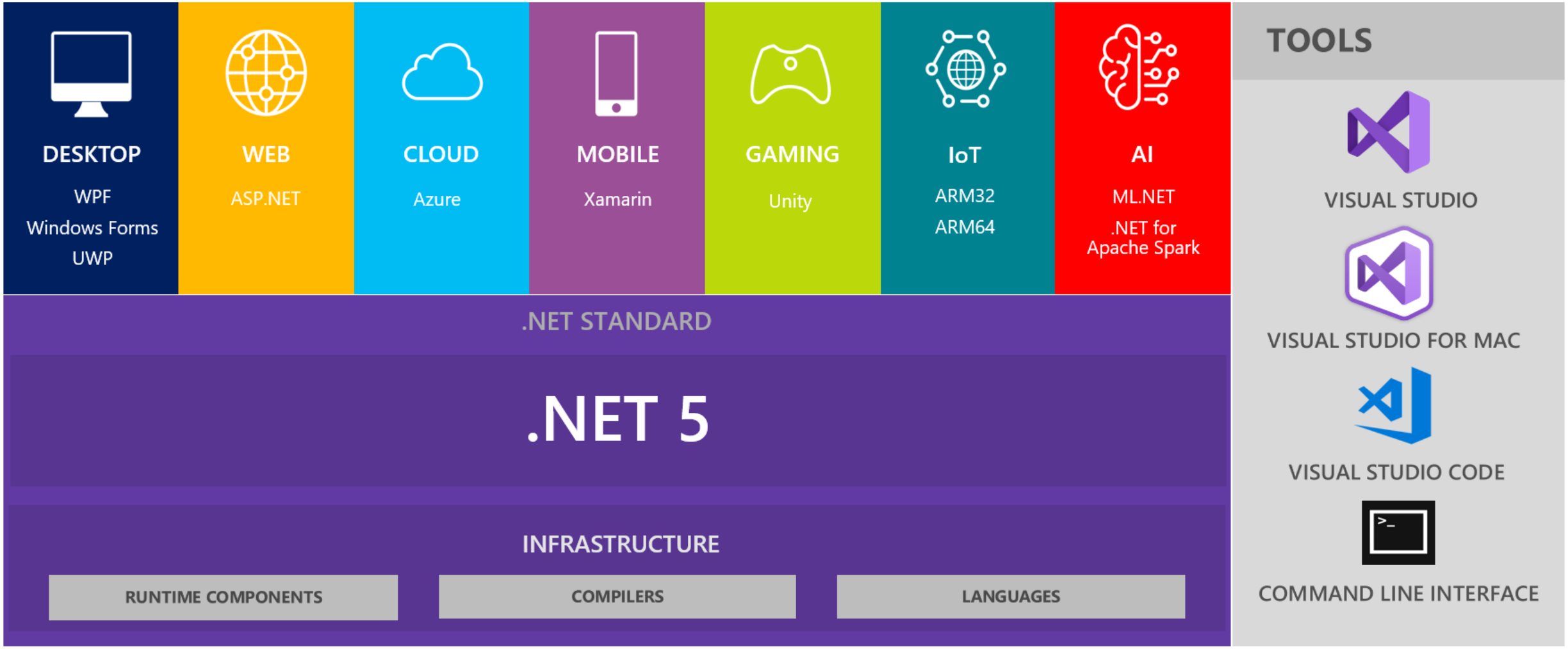
.NET Core is written from scratch to make it a modular, lightweight, fast, and cross-platform framework. It includes the core features that are required to run a basic .NET Core app. Other features are provided as NuGet Packages, which you can add to your application as needed. In this way, the .NET Core application speed up the performance, reduce the memory footprint, and becomes easy to maintain.

.NET Core Versions



[ASP.NET documentation | Microsoft Docs]

.NET 5.0 - A Unified Platform



What .NET 5 does not Support?

- Web Forms
- ASMX Services
- WCF Services
- WWF
- LINQ to SQL

.NET Core Characteristics:

Open-source Framework: .NET Core is an open-source framework maintained by Microsoft and available on GitHub under MIT and Apache 2 Licenses. You can view, download, or contribute to the source code using the following GitHub repositories:
.NET Core Runtime: https://github.com/dotnet/runtime
.NET Core SDK: https://github.com/dotnet/sdk
ASP.NET Core: https://github.com/dotnet/aspnetcore
Language Compiler Platform Roslyn: https://github.com/dotnet/Roslyn

Cross-Platform: .NET Core runs on Windows, Linux, and macOS operating systems. There is different runtime for each operating system that executes the code and generates the same output.

Consistent across Architecture: Execute the code with the same behavior in different instruction set architectures, including x64, x86, and ARM.

NET Core Characteristics Cont.

Modular Architecture: .NET Core supports a modular architecture approach using NuGet Packages. There are different NuGet Packages available for various features that can be added to the .NET Core project as needed. Even though the .NET Core library is provided as a NuGet Package. In this way, the .NET Core application speed up the performance, reduce the memory footprint, and becomes easy to maintain.

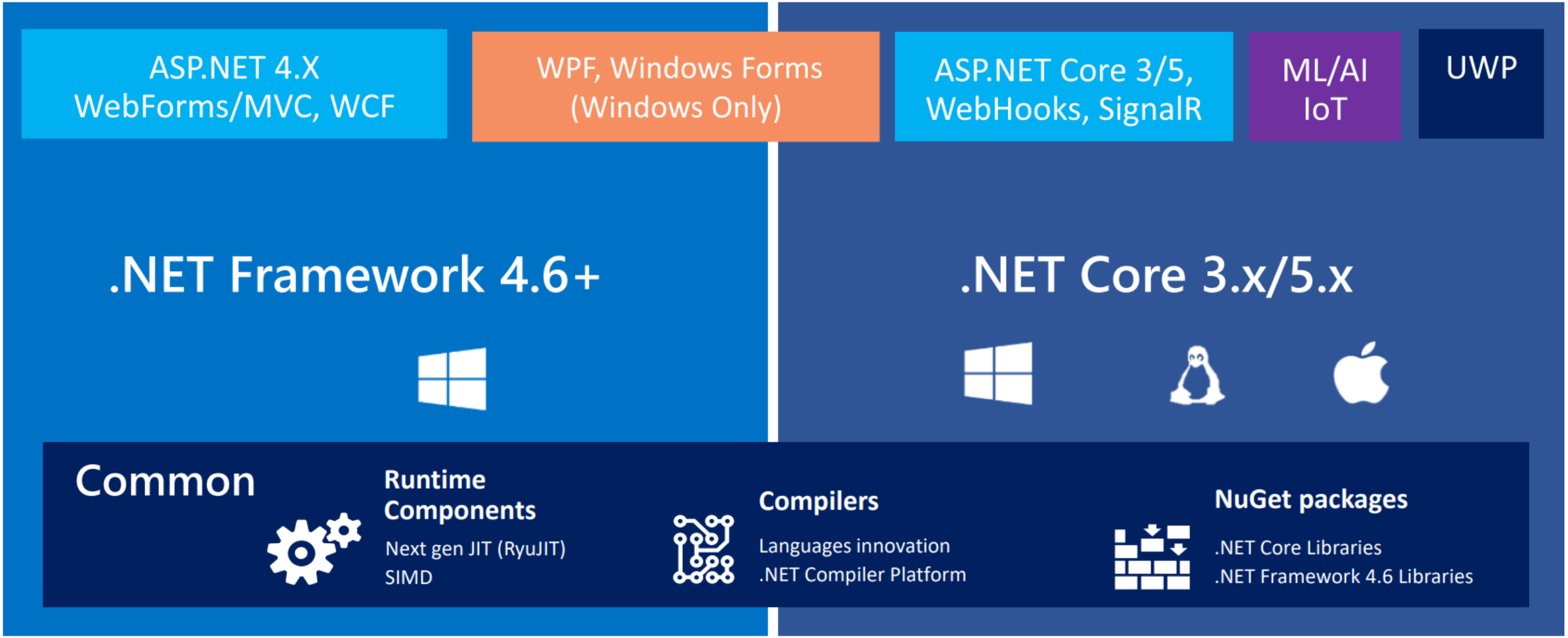
CLI Tools: .NET Core includes CLI tools (Command Line Interface) for development and continuous integration.

Flexible Deployment: .NET Core applications can be deploying user-wide or system-wide or with Docker Containers.

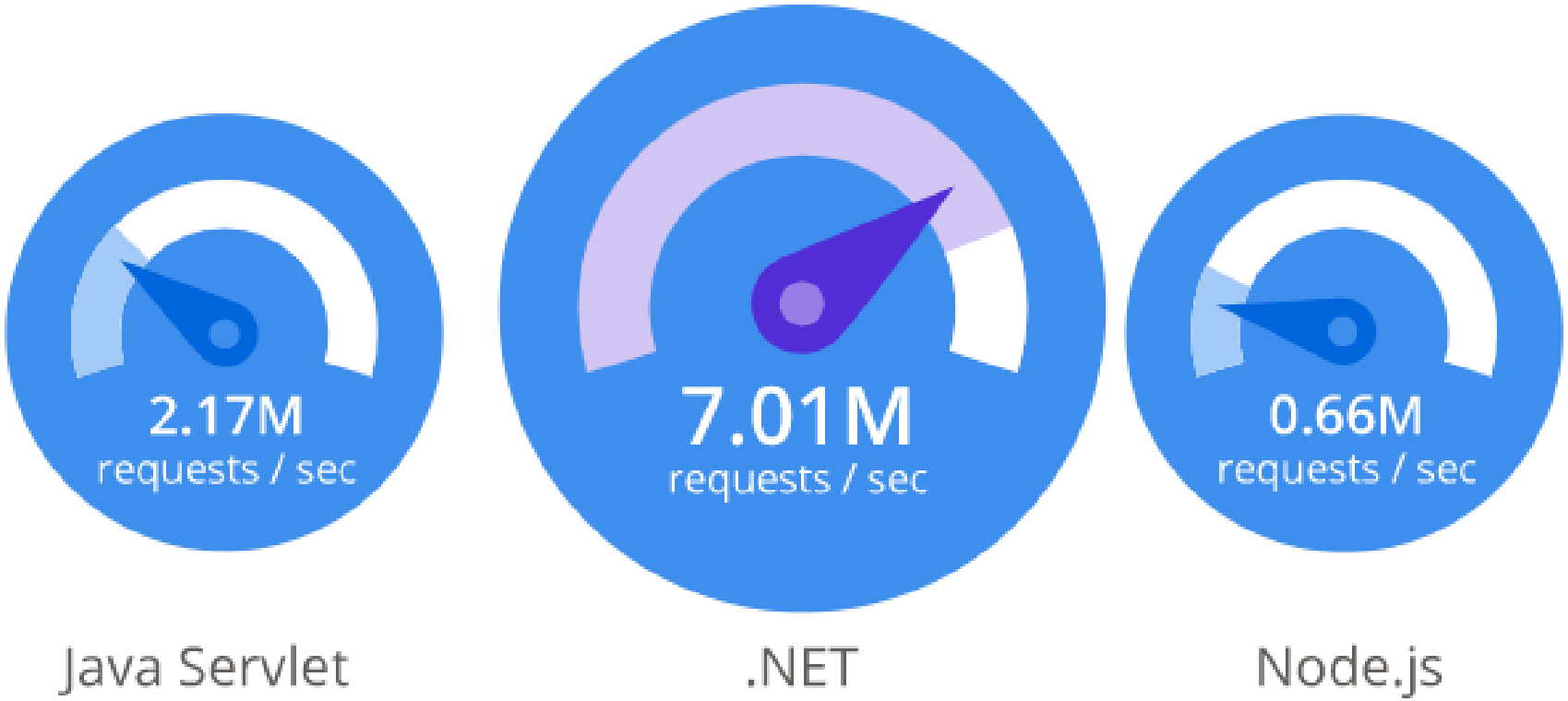
Compatibility: Compatible with .NET Framework and Mono APIs by using .NET Standard Specification.

Front End -Built-In support for SPA with client-side frameworks like Angular, React, Vue

ASP.NET Core 3.x/5.x Architecture



ASP.NET Core Performance Benchmarks

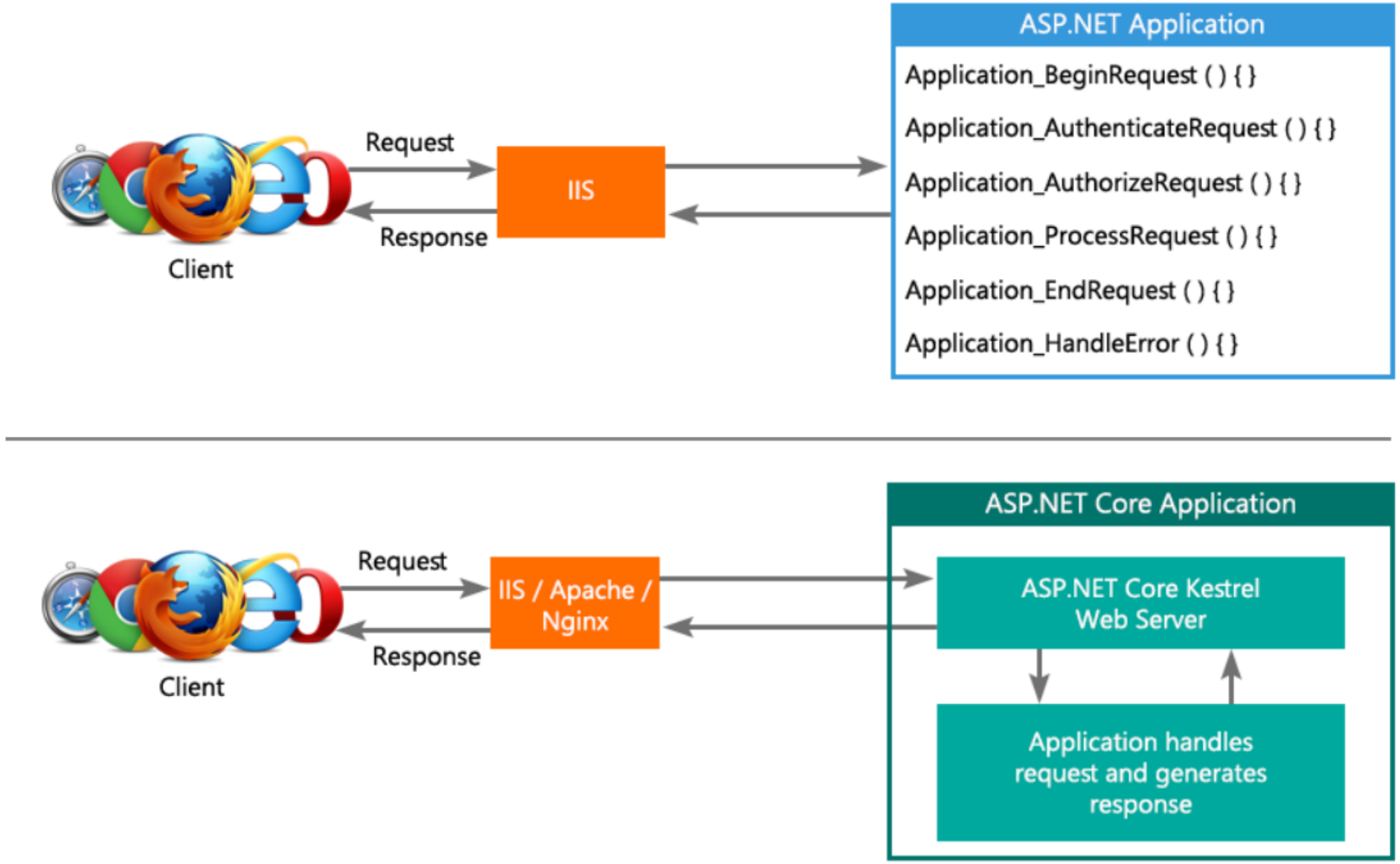


Data sourced from official tests available at TechEmpower Round 20.

ASP.NET Core Application Anatomie

- Everything starts from Program.cs, Main Method
- ASP.NET Core apps require a Startup class
- No more Global.asax
- No more Web.Config requirement
- No more modules and handlers
- Cross-platform Kestrel web server

ASP.NET and ASP.NET Core Request Processing



Request Processing