

ASP.NET CORE

21.01.2019

About me

- ASP.NET, C# Developer
- 5 years software engineer experience
- More then 10 project



Summary

Intro

- History
- .Net Standard
- CLI (command line tooling)
- Project structure

Summary

Fundamentals

- Startup and Middleware
- Application configuration
- Logging
- Dependency injection
- Host
- Web servers
- Diagnostics
- Handle errors
- Static files
- URL Redirect/Rewriting
- Localization and Globalization
- In Memory Caching (a.k.a local cache)

Summary

Web App

- MVC
- Work with MVC Views and Razor Pages
- Api Controllers
- Tag Helpers

Intro

Several thin, parallel white lines of varying lengths and slopes are positioned in the bottom right corner of the slide, creating a modern, abstract graphic element.

History

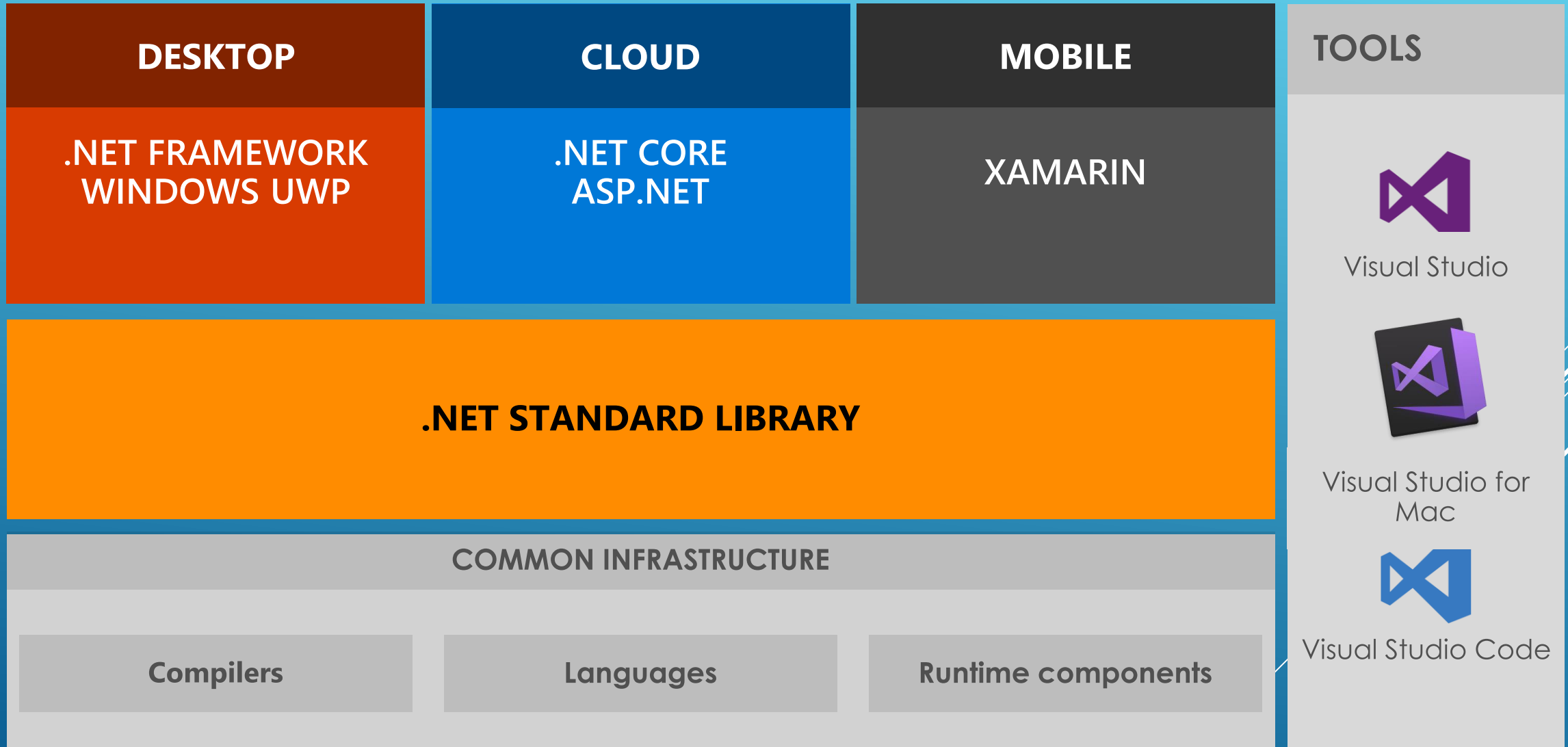
- <https://dotnetcore.gaprogram.com/2018/02/23/net-core-history/>
- <https://dotnetcore.show/episode-1-a-brief-history-of-net-core/>
- <https://mattwarren.org/images/2018/10/History%20of%20.NET%20Runtimes%20-%20Timeline.png>

What is .Net Core

- Open-Source
- Cross-platform
- Web applications, IOT apps and mobile backends
- Cloud ready
- Performance
- Built-In Dependency Injection



What is .Net Core



.NET Standard

.NET Standard **is a specification**

A set of APIs that **all .NET platforms have to implement**

.NET Standard

~

**HTML
specification**

.NET

~

Framework

Browsers

.NET Core

Xamarin

.NET Standard

- <https://github.com/dotnet/standard/blob/master/docs/faq.md>
- <https://github.com/dotnet/standard/blob/master/docs/metaphor.md>
- <https://apiof.net>
- <https://github.com/dotnet/standard>
- <https://icanhasdot.net>
- <https://packagesearch.azurewebsites.net>
- <https://github.com/dotnet/standard/blob/master/docs/versions.md>

.NET Core vs .NET Framework

Similarities

- Support the latest C#, VB.NET, F#
- Implements .NET Standard API
- Supports ASP.NET Core and EF Core
- Best experience in Visual Studio
- Great experience in Visual Studio Code
- Can be used in/with Docker

.NET Core vs .NET Framework

Differences

- .NET Framework comes with Windows
- .NET Core installs side-by-side
- .NET Core is cross-platform and OSS
- .NET Core works on Nano
- .NET Core has a strong CLI experience

Command	Purpose
dotnet new	Initialize .NET projects.
dotnet restore	Restore dependencies specified in the .NET project.
dotnet run	Compiles and immediately executes a .NET project.
dotnet build	Builds a .NET project.
dotnet publish	Publishes a .NET project for deployment (incl. runtime).
dotnet test	Runs unit tests using the test runner specified in the project.
dotnet pack	Creates a NuGet package.
dotnet migrate	Migrates project.json project to msbuild based project.

Command	Purpose
dotnet clean	Clean build output(s).
dotnet sln	Modify solution (SLN) files.
dotnet add	Add reference to the project.
dotnet remove	Remove reference from the project.
dotnet list	List reference in the project.
dotnet nuget	Provides additional NuGet commands.
dotnet msbuild	Runs Microsoft Build Engine (MSBuild).
dotnet vstest	Runs Microsoft Test Execution Command Line Tool.

Fundamentals

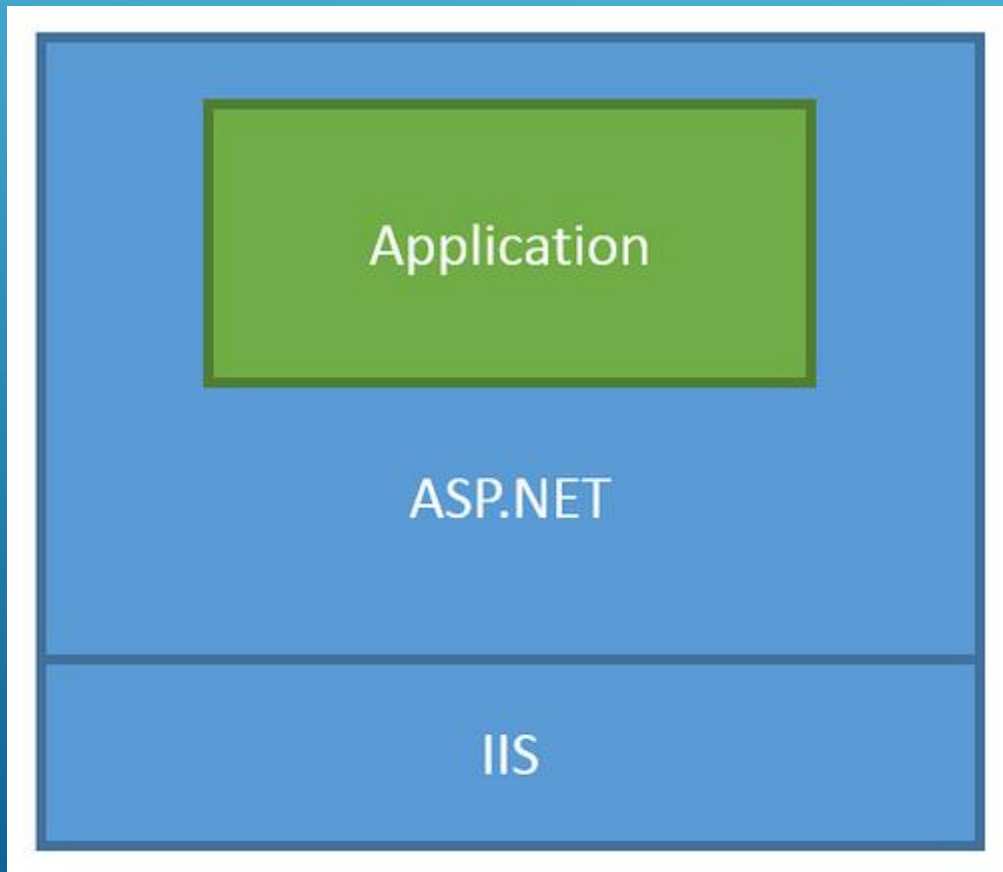
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Middleware

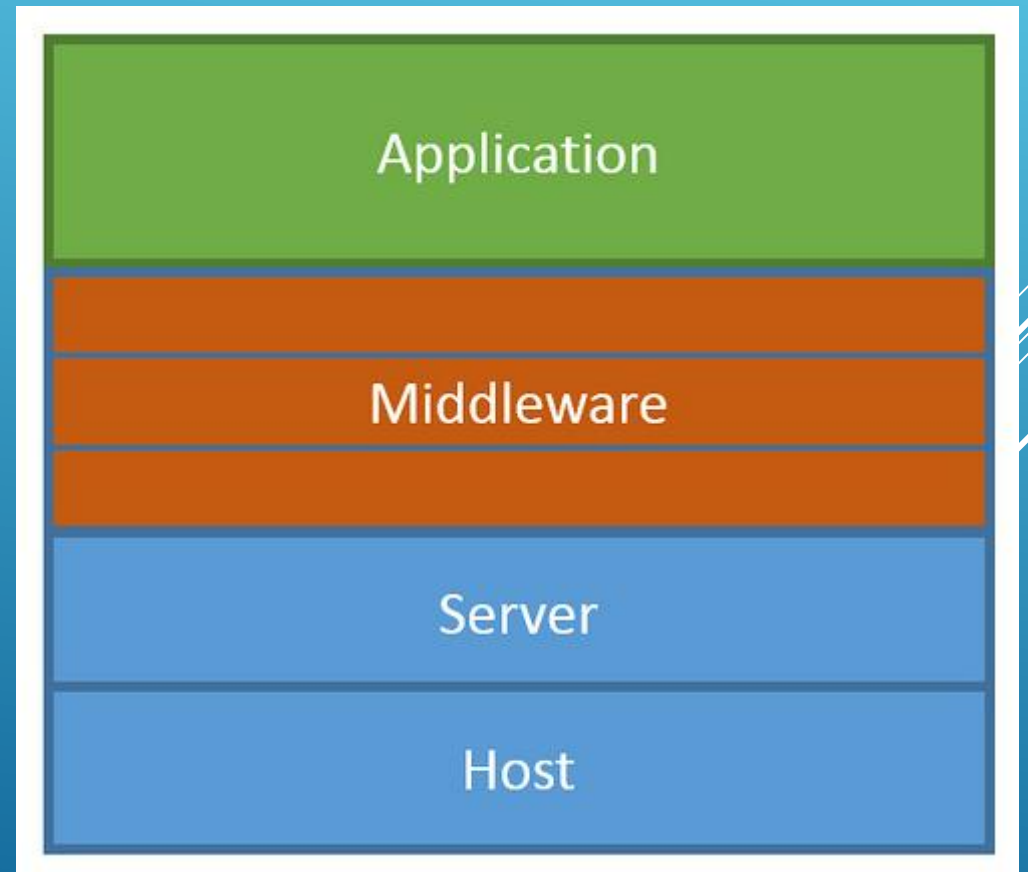


Middleware

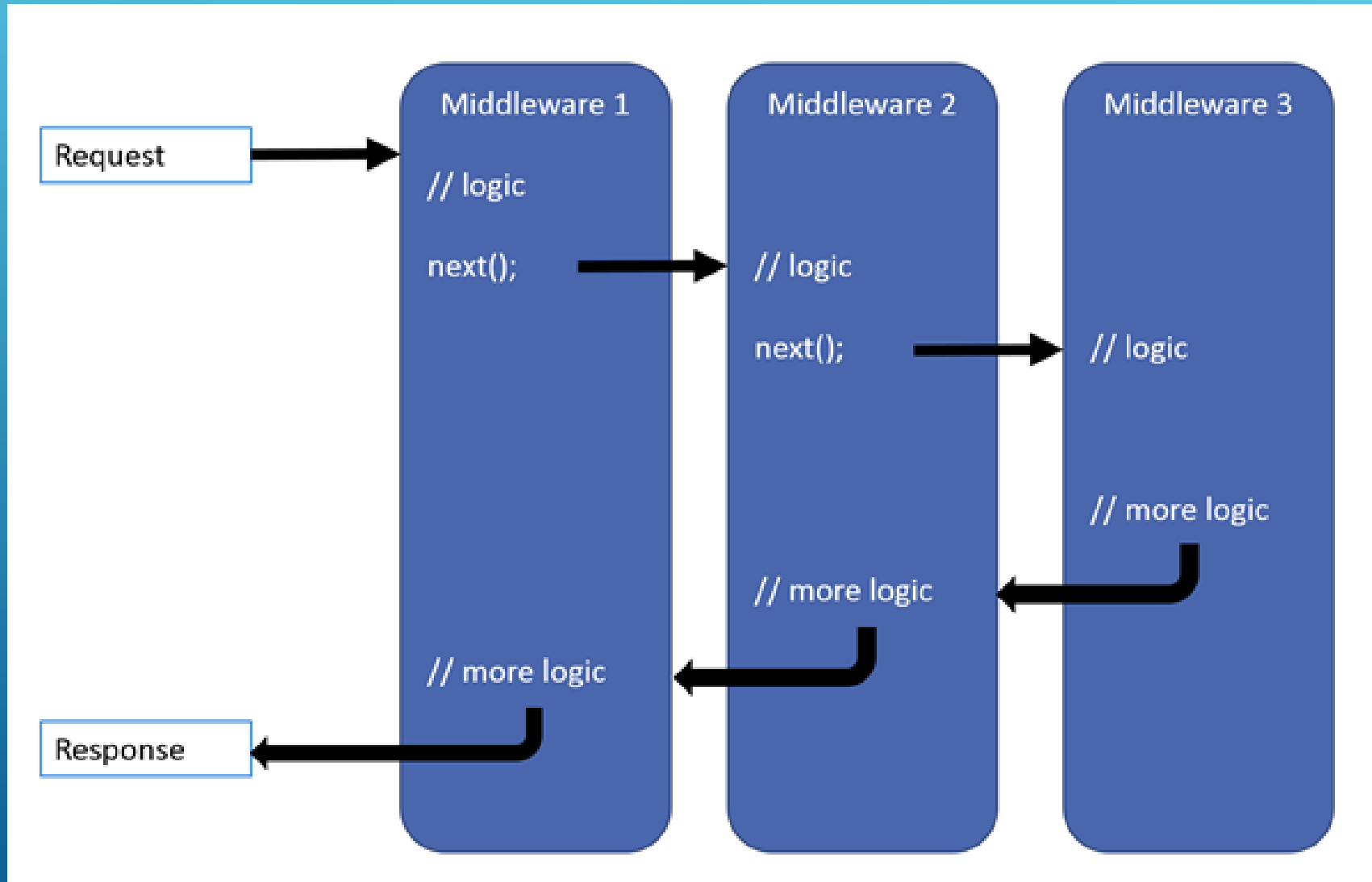
Traditional ASP.NET Application Model



ASP.NET Core Middleware



Middleware



Configuration

- Configuration providers
- Key-value pairs
- Keys are case-insensitive
- Same key is set by same or different configuration
=> LAST
- Values are strings.
- Null values can't be stored in configuration or bound to objects.

Configuration

- **Sources**
 - Azure Key Vault
 - Command-line arguments
 - Custom providers (installed or created)
 - Directory files
 - Environment variables
 - In-memory .NET objects
 - Settings files

Configuration

- **Providers**
 - File Configuration Provider
 - Azure Key Vault Configuration Provider
 - User secrets
 - Environment Variables Configuration Provider
 - Command-line Configuration Provider
 - Custom configuration provider
 - Key-per-file Configuration Provider
 - Memory Configuration Provider

Configuration

- **Microsoft.Extensions.Configuration**

Logging

- Console
 - Debug
 - EventSource
 - EventLog
 - TraceSource
 - Azure
- 
- A series of white lines of varying lengths and orientations are positioned in the bottom right corner of the slide, creating a modern, abstract graphic element.

Dependency Injection



Dependency Injection

- Autofac
- Ninject
- StructureMap
- many others

Dependency Injection

- Transient
 - Scoped
 - Singleton
- 
- A series of several parallel white lines of varying lengths and slopes, located in the bottom right corner of the slide, creating a modern, abstract graphic element.

Dependency Injection

Three horizontal lines of varying lengths, with the longest line in the middle, positioned below the title.

Microsoft.Extensions.DependencyInjection

Four parallel diagonal lines of varying lengths, positioned in the bottom right corner of the slide.

Host

- Web Host => Web apps.
- Generic Host(2.1) => Non-web apps

Host

- **Web Host**
 - **IWebHostBuilder**

Host

- **Generic Host**
 - **IHostBuilder**

Server

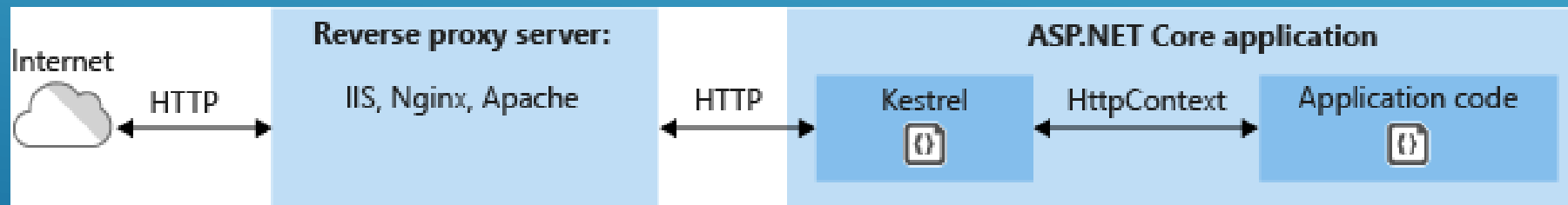
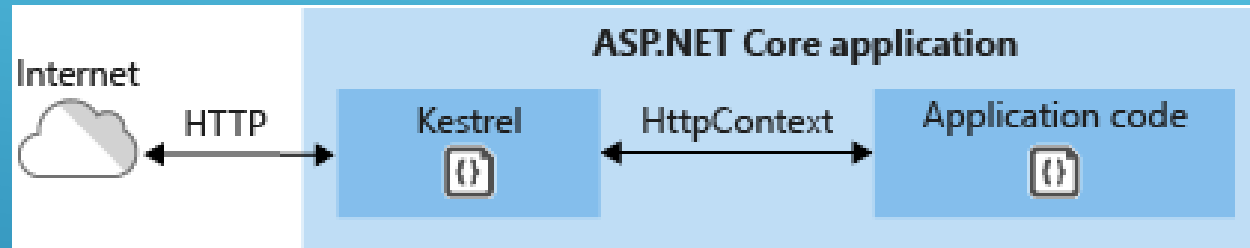
- Kestrel
- HTTP.sys -> WebListener

=> Cross platform

=> Windows

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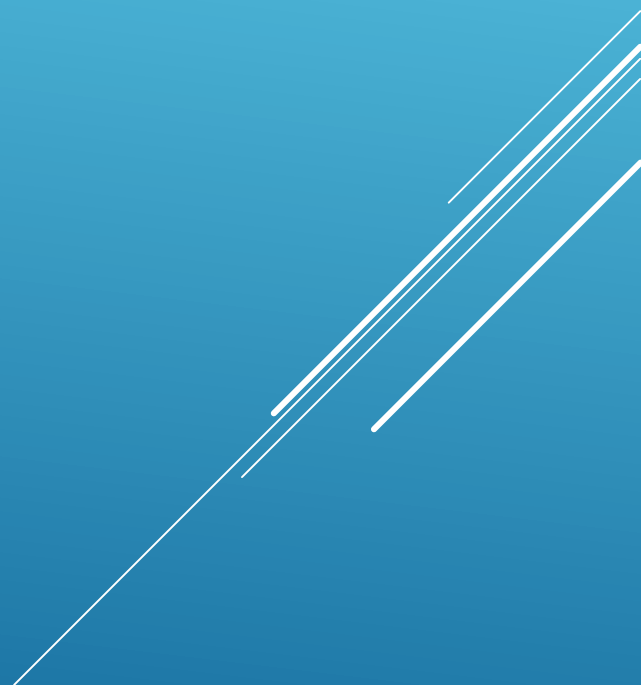
Server



Server

- Custom servers
 - OWIN

Handler errors

A decorative graphic consisting of three horizontal lines of varying lengths, with the longest line in the center and two shorter lines above and below it, all in a light blue color.

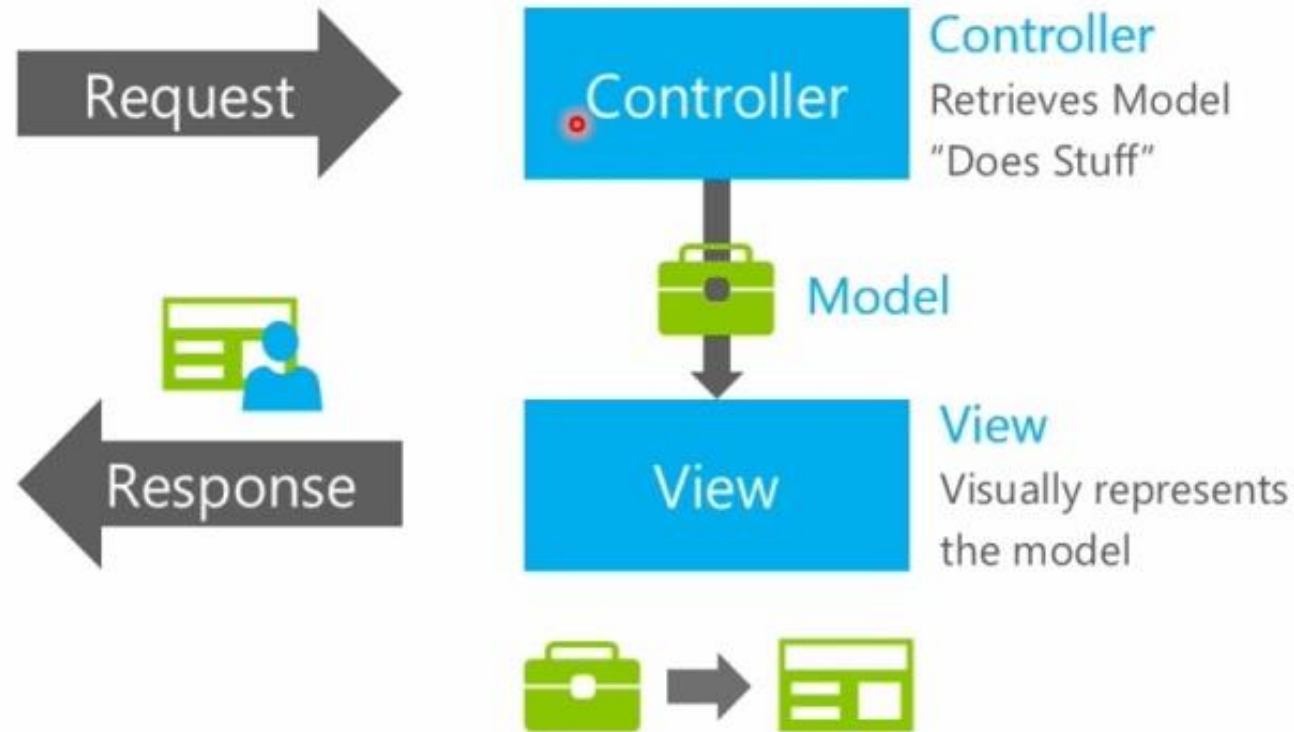
MVC

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All about MVC

Models, Views, and Controllers

What does MVC look like?



Razor pages

- @page
- Pages – folder
- OnGet
- OnPost
- XSRF/CSRF – by default

Tag Helpers

Three horizontal lines of varying lengths, with the middle line being the longest and the outer two being shorter, all in a light blue color.

Tag Helpers enable server-side code to participate in creating and rendering HTML elements in Razor files.

Four parallel diagonal lines of varying lengths, slanted upwards from left to right, in a light blue color.

Controller & Api

Three horizontal white lines of varying lengths, stacked vertically, located below the title.