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ASP.NET Core

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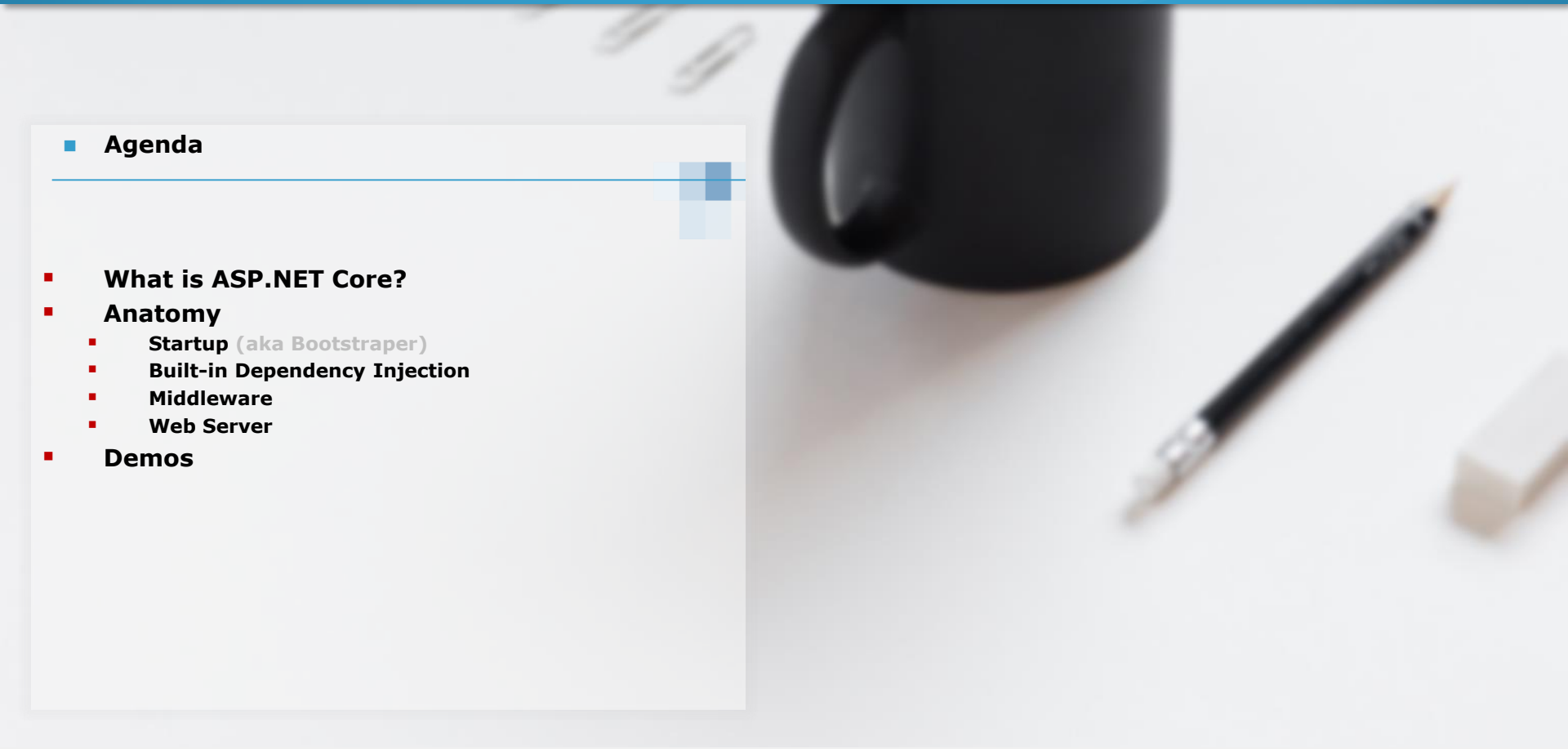


Agenda

- What is ASP.NET Core?
- Anatomy
  - Startup (aka Bootstraper)
  - Built-in Dependency Injection
  - Middleware
  - Web Server
- Demos

ASP.NET Core is the latest version of the ASP.NET family

www.asp.net

Based on .NET Core. Run it on..
- ✓ Windows
- ✓ macOS
- ✓ Linux (incl. Docker!)

.. can also run on the full .NET Framework.

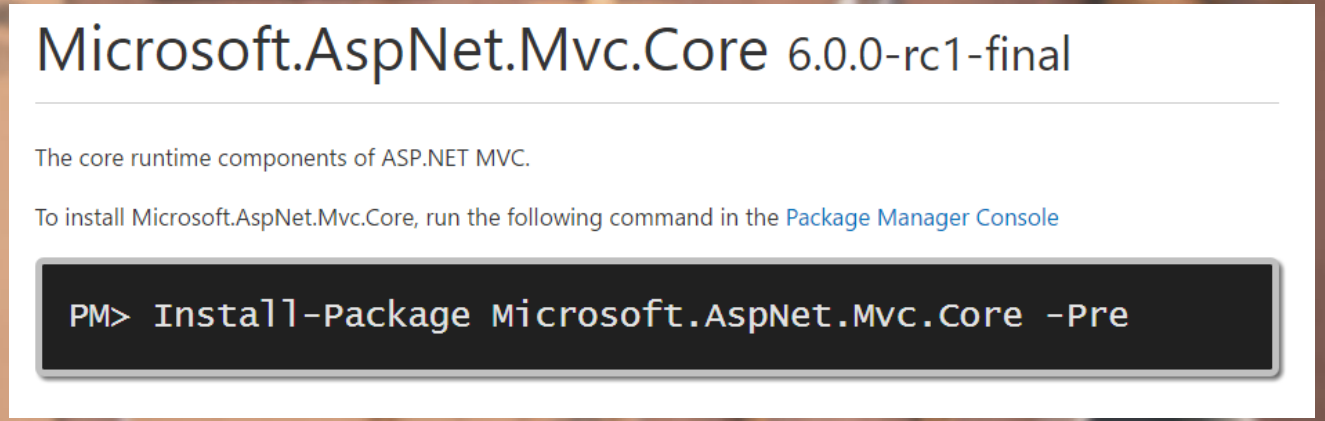
Develop with
- ✓ Visual Studio
- ✓ Visual Studio Code
- ✓ Atom
- ✓ Any other editor and CLI

It is open source (MIT License) on GitHub!

Contributes are welcome ☺

Anatomy facts

ASP.NET Core dependencies are shipped with NuGet



https://www.nuget.org/packages/Microsoft.AspNet.Mvc.Core/

Alegri Anatomy facts

ASP.NET Core dependencies are shipped with NuGet

Microsoft.AspNet.Mvc.Core 6.0.0-rc1-final

The core runtime components of ASP.NET MVC.

To install Microsoft.AspNet.Mvc.Core, run the following command in the Package Manager Console

```
PM> Install-Package Microsoft.AspNet.Mvc.Core -Pre
```

https://www.nuget.org/packages/Microsoft.AspNet.Mvc.Core/

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```
{
  "dependencies": {
    "Microsoft.NETCore.App": {
      "version": "1.0.0",
      "type": "platform"
    },
    "Microsoft.AspNetCore.Diagnostics": "1.0.0",

    "Microsoft.AspNetCore.Server.IISIntegration": "1.0.0",
    "Microsoft.AspNetCore.Server.Kestrel": "1.0.0",
    "Microsoft.Extensions.Logging.Console": "1.0.0"
  },

  "tools": {
    "Microsoft.AspNetCore.Server.IISIntegration.Tools": "1.0.0-preview2-final"
  },

  "frameworks": {
    "netcoreapp1.0": { }
  },

  "buildOptions": {
    "emitEntryPoint": true,
    "preserveCompilationContext": true
  },

  "runtimeOptions": {
    "configProperties": {
      "System.GC.Server": true
    }
  },

  "publishOptions": {
    "include": [
      "wwwroot",
      "web.config"
    ]
  },

  "scripts": {
    "postpublish": [ "dotnet publish-iis --publish-folder %publish:OutputPath% --framework %publish:FullTargetFramework%" ]
  }
}
```

Anatomy facts

Builds on a console application

```
class Program
{
    public static void Main(string[] args)
    {
        var host = new WebHostBuilder()
            .UseKestrel()
            .UseStartup<Startup>()
            .Build();

        host.Run();
    }
}
```

Services (DI/IoC)

```
class Startup
{
    public void ConfigureServices( IServiceCollection services )
    {

    }

    public void Configure( IApplicationBuilder app )
    {
        app.Run(async (context) =>
        {
            await context.Response.WriteAsync("Hello World!");
        });
    }
}
```

Middleware

Anatomy facts

ASP.NET Core comes with a built-in Dependency Injection

```
public void ConfigureServices(IServiceCollection services)
{

    // Add framework services.
    var conString = Configuration.GetConnectionString("DefaultConnection");

    services.AddDbContext<ApplicationDbContext>(options =>
                                    options.UseSqlServer( conString );

    services.AddIdentity<ApplicationUser, IdentityRole>()
        .AddEntityFrameworkStores<ApplicationDbContext>()
        .AddDefaultTokenProviders();

    services.AddMvc();

    // Add application services.
    services.AddTransient<IEmailSender, EMailSenderService();
    services.AddTransient<ISmsSender, SMSSenderService();
}
```

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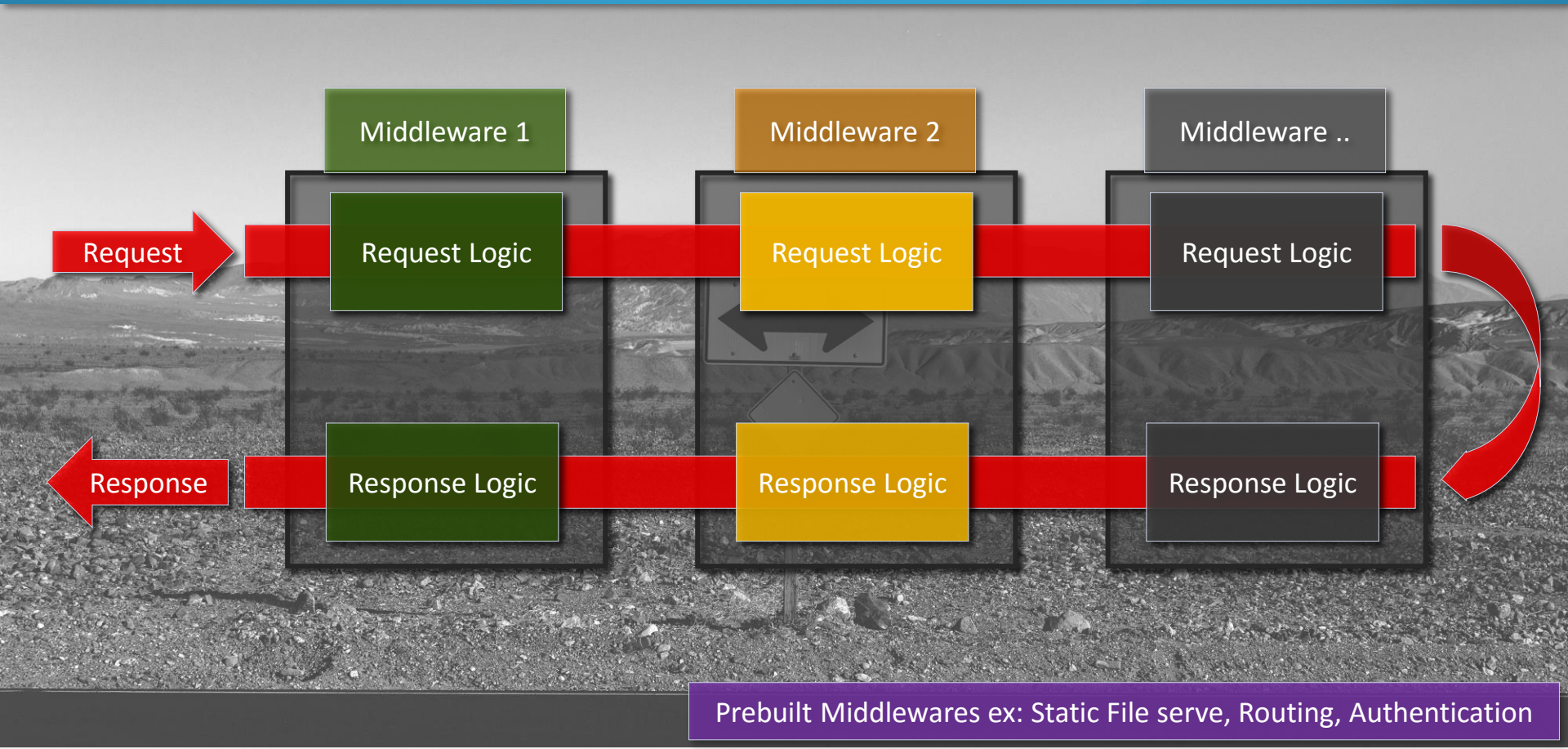
Middleware



Prebuilt Middlewares ex: Static File serve, Routing, Authentication

Middleware Sample

```
public class LogMiddleware
{
   private readonly RequestDelegate _next;
   private readonly ILogger _logger;

   public LogMiddleware( RequestDelegate next,
                                 ILoggerFactory lf )
   {
      _next = next;
      _logger = lf.CreateLogger< LogMiddleware >();
   }

   public async Task Invoke(HttpContext context)
   {
      _logger.Log($"Request: {context.Request.Path}");

       await _next.Invoke(context);

      _logger.Log("Done.");
   }
}
```

```
class Startup
{
  public void ConfigureServices( IServiceCollection services )
  {

  }

  public void Configure( IApplicationBuilder app )
  {
       app.UseMiddleware< LogMiddleware >

       app.Run(async (context) =>
       {
           await context.Response.WriteAsync("Hello World!");
       });
   }
}
```

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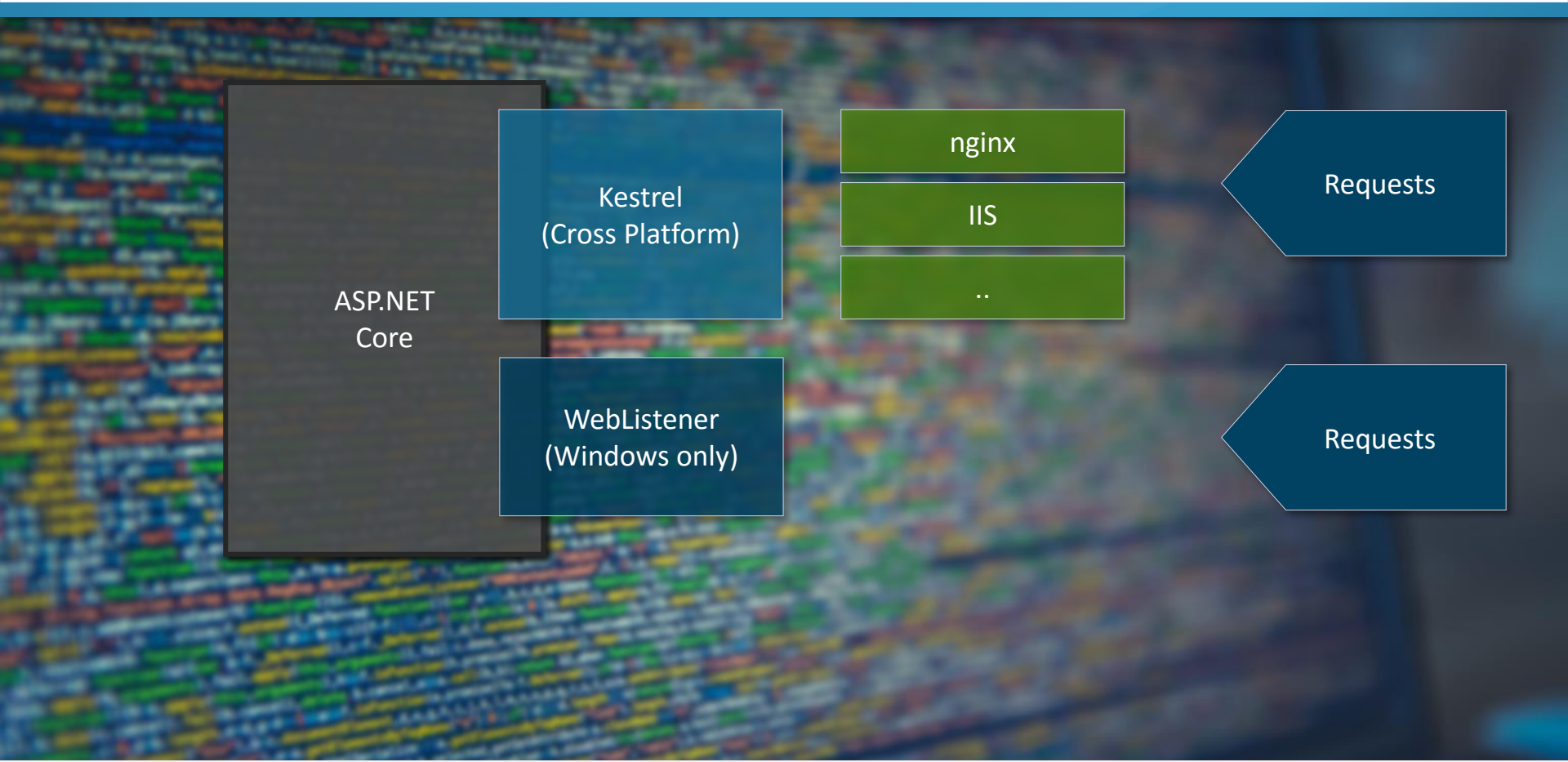
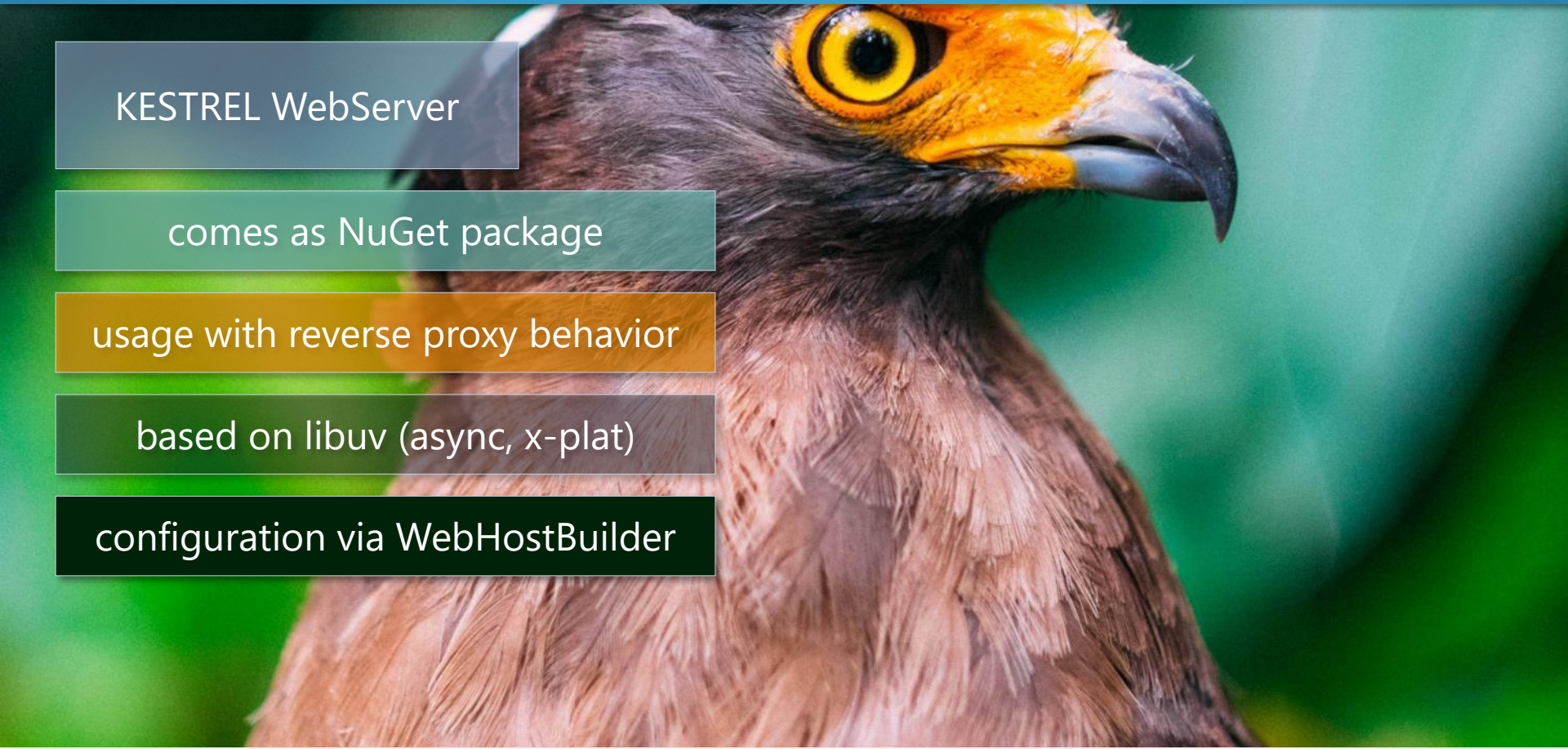
WebServers



Kestrel fundamentals



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This talk and the code samples were published on https://github.com/AlegriGroup/AspNetCore-RTM-1.0-Demos
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