

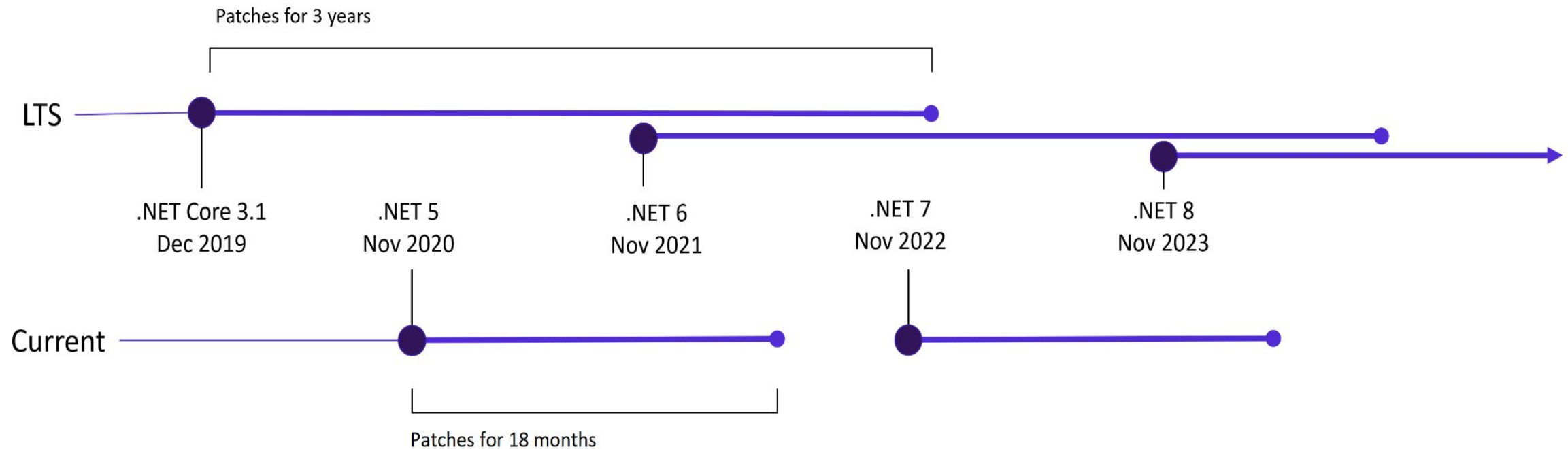


Erik Skogström
Squeed, Göteborg

.NET 6



.NET schema



.NET 6

ASP.NET Core

.NET MAUI

C# 10

Visual Studio 2022



.NET



.NET 6



.NET 6

- SDK workloads



.NET 6

- SDK workloads

dotnet workload install Installs optional workloads.

dotnet workload list Lists installed workloads.

dotnet workload repair Repairs workloads installations.

dotnet workload restore Installs workloads needed for a project or a solution.

dotnet workload search Searches for optional workloads.

dotnet workload uninstall Uninstalls a specified workload.

dotnet workload update Updates installed workloads.



.NET 6

- SDK workloads
- IL trimming

```
andy@xenon ~/code/runtime/ar  
$ du -hs publish/  
80M      publish/
```

```
andy@xenon ~/code/runtime/ar  
$ du -hs publish/  
55M      publish/
```

```
andy@xenon ~/code/runtime/ar  
$ du -hs publish/  
36M      publish/
```

.NET 6

- SDK workloads
- IL trimming
- **.NET SDK: NuGet Package Validation**



.NET 6

- SDK workloads
- IL trimming
- .NET SDK: NuGet Package Validation
- **System.Text.Json**
 - **Serialization notifications**

```
public class Person : IJsonOnDeserialized, IJsonOnSerializing
{
    public string FirstName{ get; set; }

    void IJsonOnDeserialized.OnDeserialized() => Validate(); // Call after deserialization
    void IJsonOnSerializing.OnSerializing() => Validate(); // Call before serialization

    private void Validate()
    {
        if (FirstName is null)
        {
            throw new InvalidOperationException("The 'FirstName' property cannot be 'null'.");
        }
    }
}
```

.NET 6

- SDK workloads
- IL trimming
- .NET SDK: NuGet Package Validation
- **System.Text.Json**
 - Serialization notifications
 - **Serialization property ordering**

```
public class Person
{
    public string City { get; set; } // No order defined (has the default ordering value of 0)

    [JsonPropertyOrder(1)] // Serialize after other properties that have default ordering
    public string FirstName { get; set; }

    [JsonPropertyOrder(2)] // Serialize after FirstName
    public string LastName { get; set; }

    [JsonPropertyOrder(-1)] // Serialize before other properties that have default ordering
    public int Id { get; set; }
}
```

.NET 6

- SDK workloads
- IL trimming
- .NET SDK: NuGet Package Validation
- System.Text.Json
 - Serialization notifications
 - Serialization property ordering
- HTTP/3



.NET 6

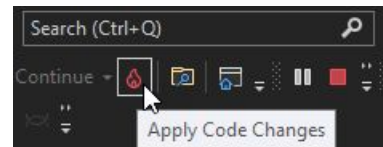
- SDK workloads
- IL trimming
- .NET SDK: NuGet Package Validation
- System.Text.Json
 - Serialization notifications
 - Serialization property ordering
- HTTP/3
- **.NET Hot Reload**



.NET 6

- SDK workloads
- IL trimming
- .NET SDK: NuGet Package Validation
- System.Text.Json
 - Serialization notifications
 - Serialization property ordering
- HTTP/3
- .NET Hot Reload

dotnet watch



ASP.NET Core

ASP.NET Core

- **Render Blazor components from JavaScript**



ASP.NET Core

- **Render Blazor components from JavaScript**

Blazor Server

```
builder.Services.AddServerSideBlazor(options =>
{
    options.RootComponents.RegisterForJavaScript<Counter>(identifier: "counter");
});
```

Blazor WebAssembly

```
builder.RootComponents.RegisterForJavaScript<Counter>(identifier: "counter");
```

```
let containerElement = document.getElementById('my-counter');
await Blazor.rootComponents.add(containerElement, 'counter', { incrementAmount: 10 });
```



ASP.NET Core

- Render Blazor components from JavaScript
- **Blazor custom elements**

```
options.RootComponents.RegisterAsCustomElement<Counter>("my-counter");
```

```
<my-counter increment-amount={incrementAmount}></my-counter>
```



ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- **Modify <head> tag from Blazor components**



ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- **Modify <head> tag from Blazor components**

```
<PageTitle>@title</PageTitle>

<HeadContent>
  <meta name="description" content="@description">
</HeadContent>

@code {
  private string description = "Description set by component";
  private string title = "Title set by component";
}
```



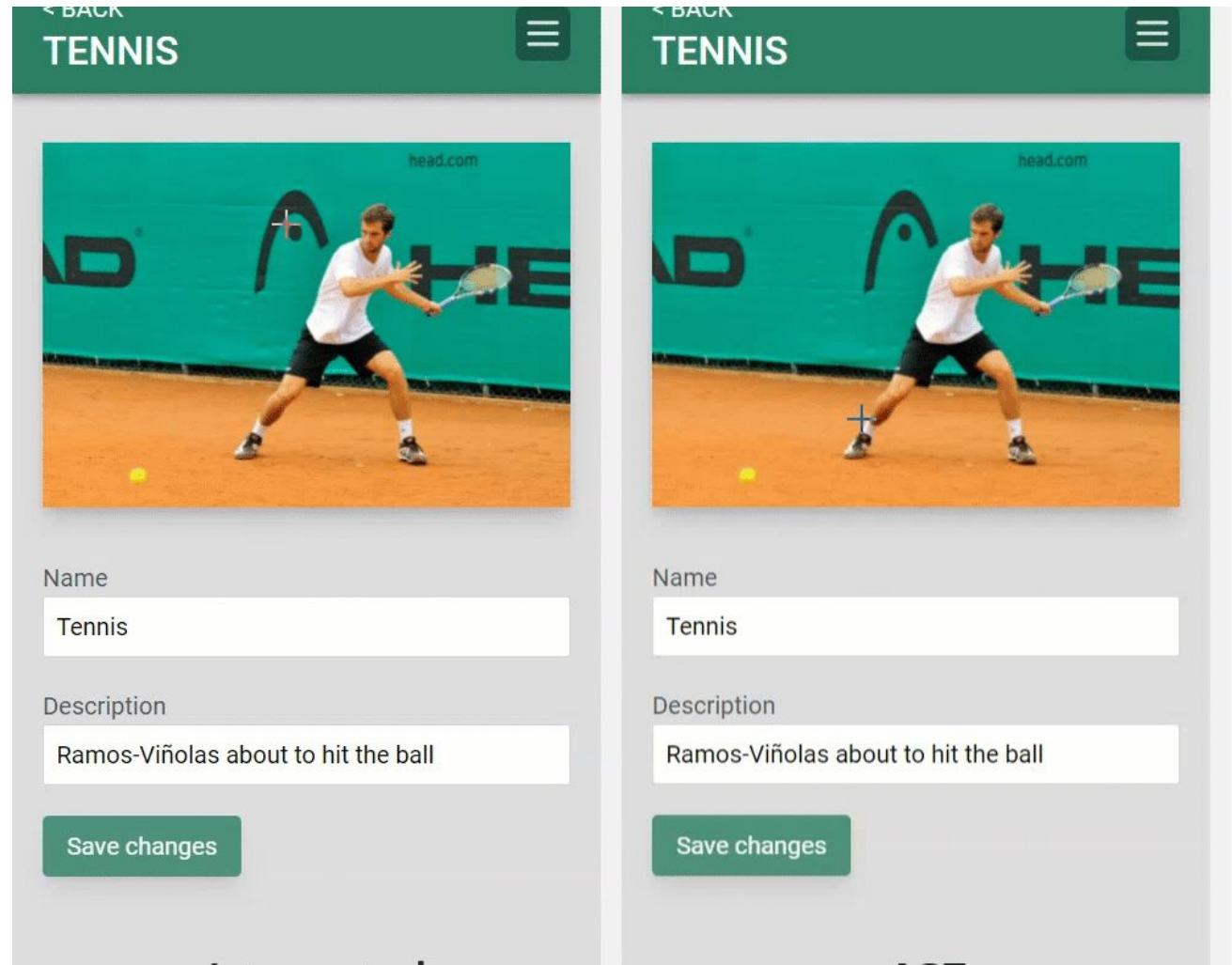
ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- Modify <head> tag from Blazor components
- **Blazor WebAssembly ahead-of-time**



ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- Modify <head> tag from Blazor components
- **Blazor WebAssembly ahead-of-time**



ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- Modify <head> tag from Blazor components
- Blazor WASM ahead-of-time
- **Blazor WASM runtime relinking**



ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- Modify <head> tag from Blazor components
- Blazor WASM ahead-of-time
- Blazor WASM runtime relinking
- Minimal APIs
 - New Hosting API

Program.cs

```
using Microsoft.AspNetCore.Hosting;
using Microsoft.Extensions.Configuration;
using Microsoft.Extensions.Hosting;
using Microsoft.Extensions.Logging;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Threading.Tasks;

namespace WebApplication23
{
    public class Program
    {
        public static void Main(string[] args)
        {
            CreateHostBuilder(args).Build().Run();
        }

        public static IHostBuilder CreateHostBuilder(string[] args) =>
            Host.CreateDefaultBuilder(args)
                .ConfigureWebHostDefaults(webBuilder =>
                {
                    webBuilder.UseStartup<Startup>();
                })
                ;
    }
}
```

Startup.cs

```
using Microsoft.AspNetCore.Builder;
using Microsoft.AspNetCore.Hosting;
using Microsoft.AspNetCore.HttpsPolicy;
using Microsoft.AspNetCore.Mvc;
using Microsoft.Extensions.Configuration;
using Microsoft.Extensions.DependencyInjection;
using Microsoft.Extensions.Hosting;
using Microsoft.Extensions.Logging;
using Microsoft.OpenApi.Models;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Threading.Tasks;

namespace WebApplication23
{
    public class Startup
    {
        public Startup(IConfiguration configuration)
        {
            Configuration = configuration;
        }

        public IConfiguration Configuration { get; }

        // This method gets called by the runtime. Use this method to add services to the container.
        public void ConfigureServices(IServiceCollection services)
        {
            services.AddControllers();
            services.AddSwaggerGen(c =>
            {
                c.SwaggerDoc("v1", new OpenApiInfo { Title = "WebApplication23", Version = "v1" });
            });

            // This method gets called by the runtime. Use this method to configure the HTTP request pipeline.
            public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
            {
                if (env.IsDevelopment())
                {
                    app.UseDeveloperExceptionPage();
                    app.UseSwagger();
                    app.UseSwaggerUI(c => c.SwaggerEndpoint("/swagger/v1/swagger.json", "WebApplication23 v1"));
                }

                app.UseHttpsRedirection();
                app.UseRouting();
                app.UseAuthorization();

                app.UseEndpoints(endpoints =>
                {
                    endpoints.MapControllers();
                });
            }
        }
    }
}
```

ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- Modify <head> tag from Blazor components
- Blazor WASM ahead-of-time
- Blazor WASM runtime relinking
- **Minimal APIs**
 - **New Hosting API**

ASP.NET Core Web API in .NET 6

```
var builder = WebApplication.CreateBuilder(args);

builder.Services.AddControllers();
builder.Services.AddSwaggerGen(c =>
{
    c.SwaggerDoc("v1", new() { Title = "WebApplication22", Version = "v1" });
});

var app = builder.Build();

if (app.Environment.IsDevelopment())
{
    app.UseSwagger();
    app.UseSwaggerUI(c => c.SwaggerEndpoint("/swagger/v1/swagger.json", "WebApplication22 v1"));
}

app.UseHttpsRedirection();

app.UseAuthorization();

app.MapControllers();

app.Run();
```



ASP.NET Core Web API in .NET 6

```
var builder = WebApplication.CreateBuilder(args);

builder.Services.AddControllers();
builder.Services.AddSwaggerGen(c =>
{
    c.SwaggerDoc("v1", new() { Title = "WebApplication22", Version = "v1" });
});

var app = builder.Build();

if (app.Environment.IsDevelopment())
{
    app.UseSwagger();
    app.UseSwaggerUI(c => c.SwaggerEndpoint("/swagger/v1/swagger.json", "WebApplication22 v1"));
}

app.UseHttpsRedirection();

app.UseAuthorization();

app.MapControllers();

app.Run();
```

Program.cs

```
using Microsoft.AspNetCore.Hosting;
using Microsoft.Extensions.Configuration;
using Microsoft.Extensions.Hosting;
using Microsoft.Extensions.Logging;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Threading.Tasks;

namespace WebApplication23
{
    public class Program
    {
        public static void Main(string[] args)
        {
            CreateHostBuilder(args).Build().Run();
        }

        public static IHostBuilder CreateHostBuilder(string[] args) =>
            Host.CreateDefaultBuilder(args)
                .ConfigureWebHostDefaults(webBuilder =>
                {
                    webBuilder.UseStartup<Startup>();
                })
        }
    }
}
```

Startup.cs

```
using Microsoft.AspNetCore.Builder;
using Microsoft.AspNetCore.Hosting;
using Microsoft.AspNetCore.HttpsPolicy;
using Microsoft.AspNetCore.Mvc;
using Microsoft.Extensions.Configuration;
using Microsoft.Extensions.DependencyInjection;
using Microsoft.Extensions.Hosting;
using Microsoft.Extensions.Logging;
using Microsoft.OpenApi.Models;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Threading.Tasks;

namespace WebApplication23
{
    public class Startup
    {
        public Startup(IConfiguration configuration)
        {
            Configuration = configuration;
        }

        public IConfiguration Configuration { get; }

        // This method gets called by the runtime. Use this method to add services to the container.
        public void ConfigureServices(IServiceCollection services)
        {
            services.AddControllers();
            services.AddSwaggerGen(c =>
            {
                c.SwaggerDoc("v1", new OpenApiInfo { Title = "WebApplication23", Version = "v1" });
            });
        }

        // This method gets called by the runtime. Use this method to configure the HTTP request pipeline
        public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
        {
            if (env.IsDevelopment())
            {
                app.UseDeveloperExceptionPage();
                app.UseSwagger();
                app.UseSwaggerUI(c => c.SwaggerEndpoint("/swagger/v1/swagger.json", "WebApplication23 v1"));
            }

            app.UseHttpsRedirection();

            app.UseRouting();

            app.UseAuthorization();

            app.UseEndpoints(endpoints =>
            {
                endpoints.MapControllers();
            });
        }
    }
}
```



ASP.NET Core

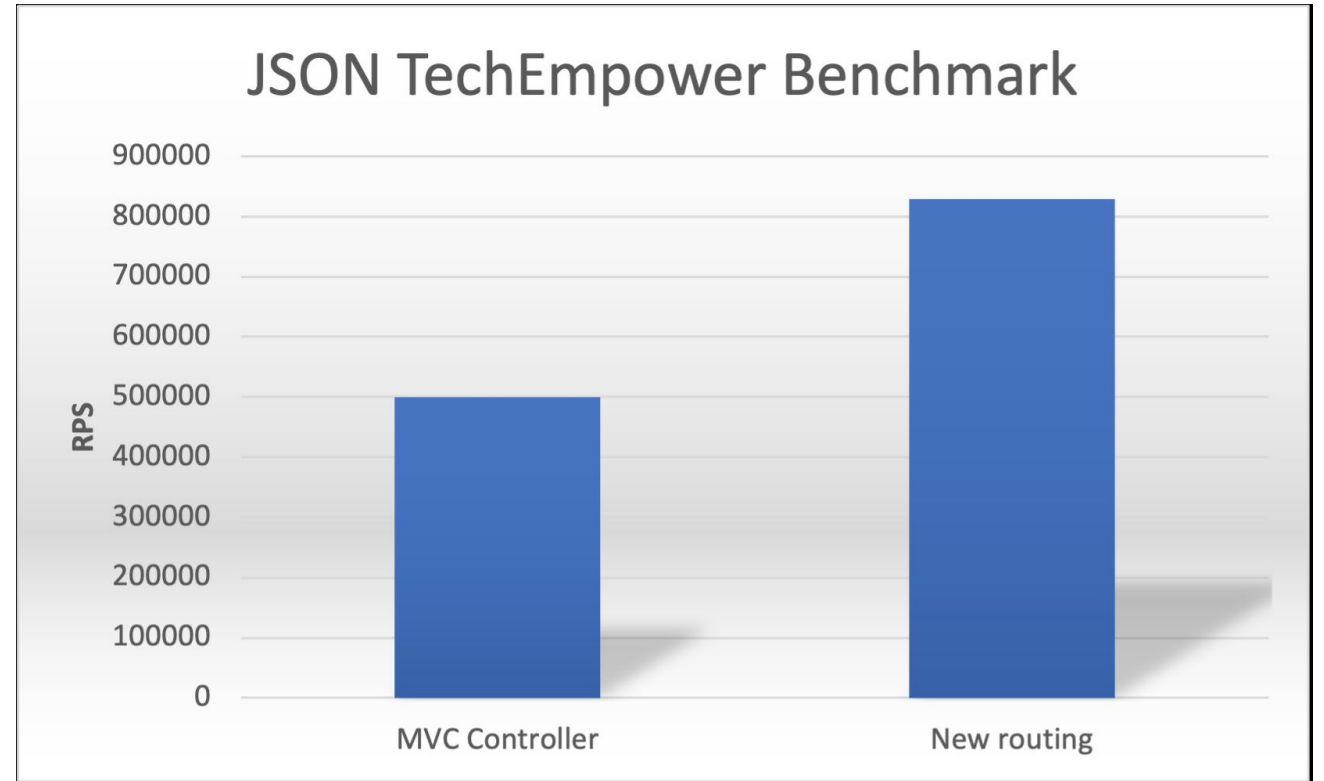
- Render Blazor components from JavaScript
- Blazor custom elements
- Modify <head> tag from Blazor components
- Blazor WASM ahead-of-time
- Blazor WASM runtime relinking
- **Minimal APIs**
 - New hosting API
 - New routing API

```
app.MapGet("/", async httpContext =>  
{  
    await httpContext.Response.WriteAsync("Hello World!");  
});
```



ASP.NET Core

- Render Blazor components from JavaScript
- Blazor custom elements
- Modify <head> tag from Blazor components
- Blazor WASM ahead-of-time
- Blazor WASM runtime relinking
- **Minimal APIs**
 - New hosting API
 - New routing API

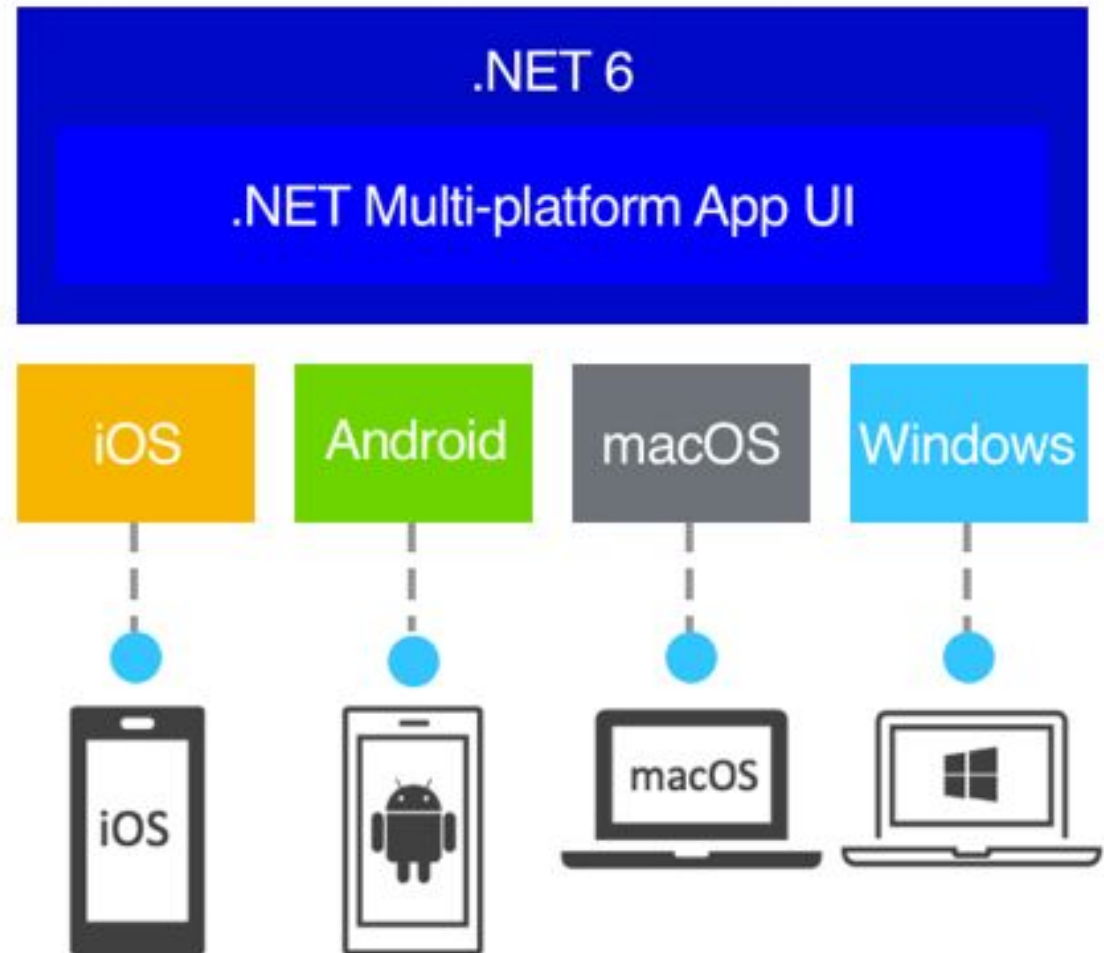


.NET MAUI



.NET MAUI

- Vad är det?



Prestanda

- **Arrays, Strings, Spans** → clear array ~30%
- **Collections and LINQ** → clone dictionary ~40%
- **JSON** → ~30%
- **Size** → ~10% → upp mot 50% med trimmning
- **Startup** → ~30% snabbare vid “Hello, World”-appen
- **Blazor and mono** → ~40% .NET 6 vs 5 → ~16x .NET 6 AOT



- .NET 6 - <https://devblogs.microsoft.com/dotnet/announcing-net-6-release-candidate-1/>
- ASP.NET Core - <https://devblogs.microsoft.com/aspnet/asp-net-core-updates-in-net-6-rc-1/>
- .NET MAUI - <https://devblogs.microsoft.com/dotnet/update-on-dotnet-maui/>
- Performance - <https://devblogs.microsoft.com/dotnet/performance-improvements-in-net-6/>
- .NET 6.0.0 RC 1 - <https://github.com/dotnet/core/blob/main/release-notes/6.0/preview/6.0.0-rc.1.md>



.NET Conf 2021

November 9-11



FRÅGOR?



TACK



[erikskogstrom/examples](#)



[erik-skogstrom](#)

