

State of .NET

Microsoft BUILD Recap

Markus Egger
President and Chief Software Architect
CODE Magazine & Consulting

Kicking Things Off

Jim Duffy

- Director of Business Development
CODE Magazine & Consulting
- Former Developer – Drawn to the Dark Side: Now Responsible for
Sales & Marketing
- jduffy@codemag.com
- International Author and Speaker
- Former Microsoft RD (Regional Director) 9 years
- Former 11 time Microsoft Most Valuable Professional (MVP)
- Twitter: @jmduffy



Build Cross Platform Apps With Photino

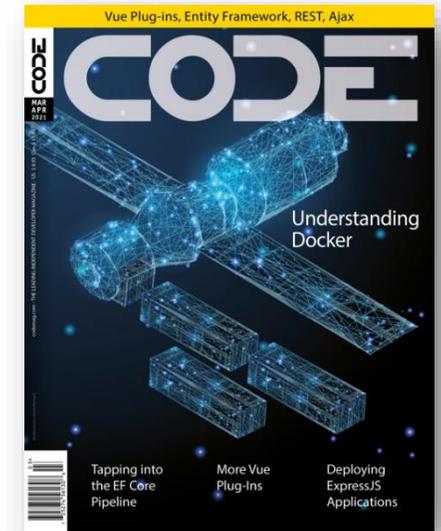


- Build native, cross-platform desktop apps that are lighter than light.
- Lightweight open-source framework for building native, cross-platform desktop applications with Web UI technology.
- Photino is maintained by the CODE Magazine team with the help of the open-source community.
- tryphotino.io
- [Github.com/tryphotino](https://github.com/tryphotino)

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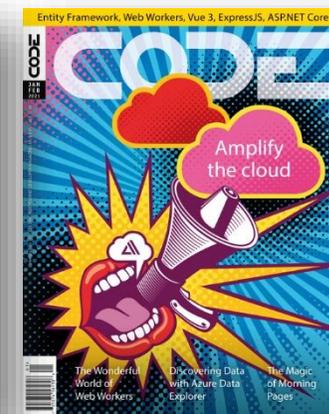
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About the Presenter

- **Markus Egger**
- President and Chief Software Architect
EPS Software Corp. (dba CODE Consulting)
- Publisher – CODE Magazine
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- Microsoft RD (Regional Director)
- Microsoft MVP 1995-2019
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- Twitter: @markusegger



About CODE Consulting

“Helping People Build Better Software”

- Custom Software Development, Training, Mentoring,...
- Web, Cloud, Mobile, Desktop, Serverless, Databases,...
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- Project Rescue, App Modernization (VB, VFP, Access, etc.)
- Development Team Staff Augmentation
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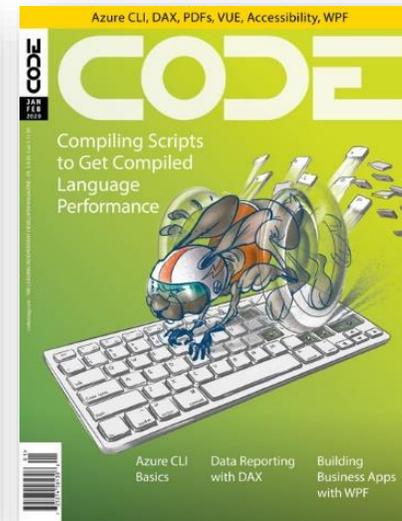
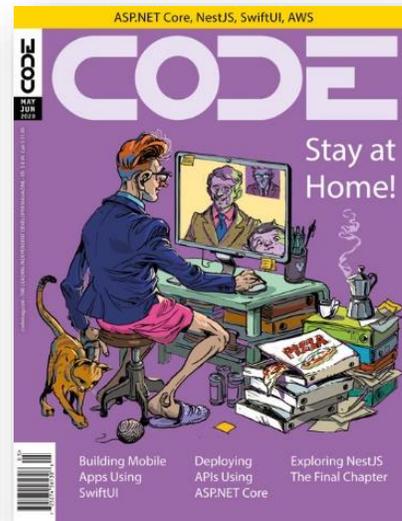
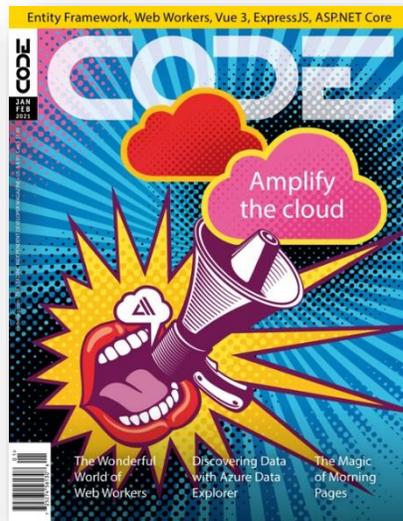
- One hour on us. Really. Schedule a call today. Slots are limited.
- No strings. No commitment. No credit card required.
- Just help from our team of experience software developers.
- Got questions? Stuck on an issue? Platform and/or architecture decisions to make? We can help!



Contact us at info@codemag.com or jduffy@codemag.com

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- Complete this very short 12 question survey for a chance at a \$100 Amazon Gift Card!

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- Survey must be completed by 11:59pm ET on 6/4/2021 to be eligible!
- Name selected from registered attendee list. Completed survey is required to win.

CODE Magazine State of .NET - The State of Azure

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* Required

1. Full Name *

2. Company Name *

THIS SLIDE WILL BE REPEATED AT THE END AND SURVEY LINK REPEATED IN THE CHAT WINDOW!

Prior Webinar Recordings

- Slides & Videos:
- State of .NET Webinar Series
 - <https://www.codemag.com/StateOfDotNet>
- CODE Presents Webinar Series
 - <https://www.codemag.com/CODEPresents>

Recent Event Recordings

State of .NET - State of DevOps

3/31/2021



State of .NET - Windows Desktop Development in .NET 5

2/24/2021



State of .NET - Blazor Web Development with .NET 5 - with Markus Egger

1/27/2021



State of .NET - .NET 5 In-Depth (.NET Conf Recap)

11/18/2020



Agenda

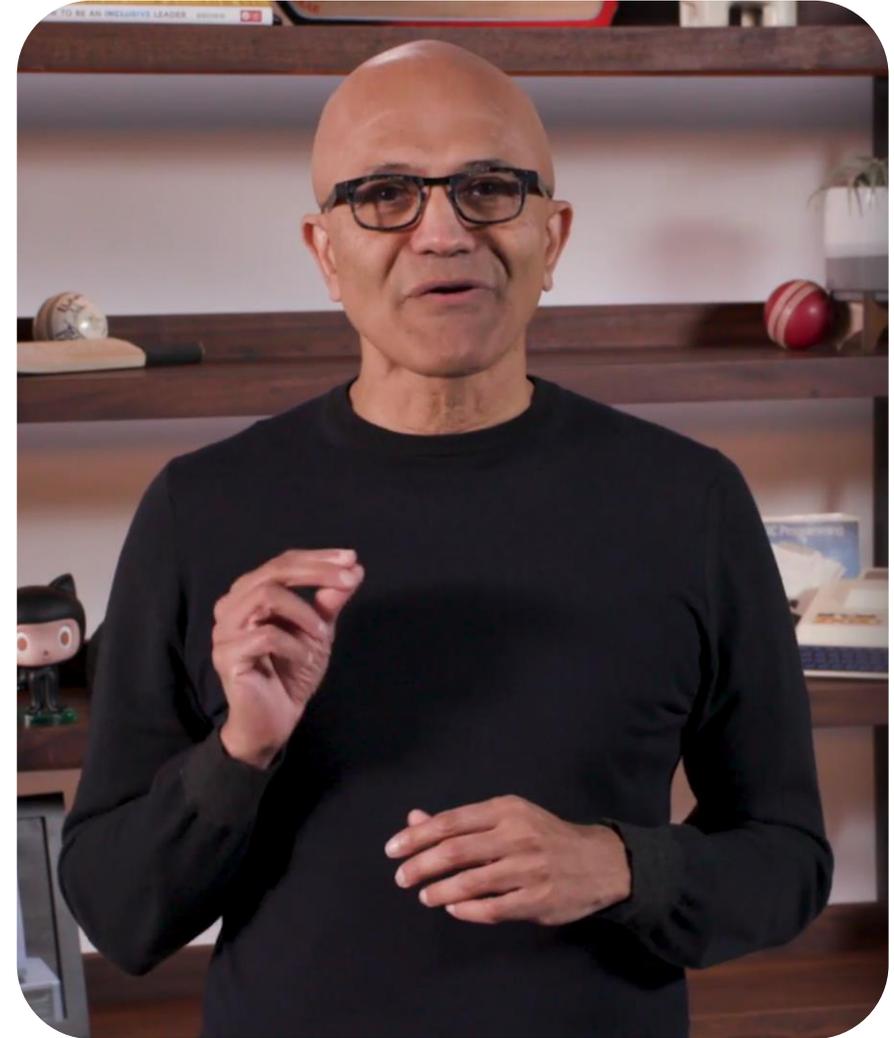
- BUILD overview of announcements
- What's new for developers
- News for various platforms
- Surprisingly little Azure (although there is some)
- Branching out beyond core development topics into areas you may have not thought of as interesting before

BUILD Overview



What BUILD 2021 Was Like

- As expected, BUILD was a virtual event
- Somewhat smaller in scope than previous BUILDS
- Will be supplemented with "What's Next?" events

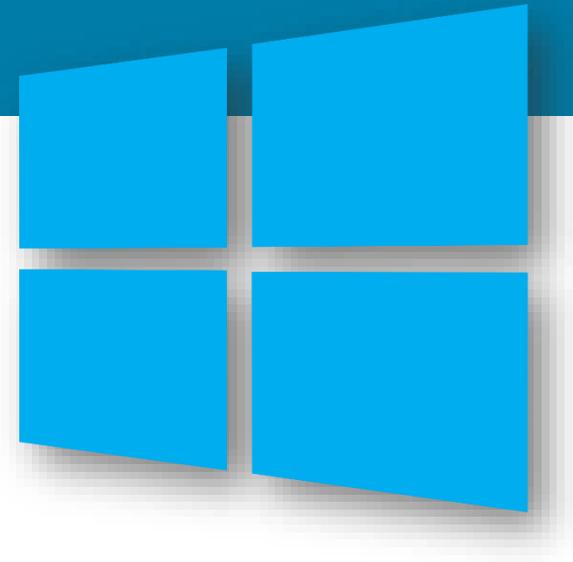


BUILD – Major Announcements

- BUILD provided few surprises this year
- More Azure, .NET, Visual Studio, AI, Data,...
- An emergence of the “collaborative app”
- A return to “no-dev apps”

The Role of Tech in the World

- Growing from 5% to 10% of GDP
- Digital transformation that was projected to happen in the next 10 years is happening now
- Tech-hiring at non-tech firms is outpacing traditional hiring
- An estimated 5 million new apps will be built in the next 5 years
 - More than all apps built in the last 40 years
- 5x faster demand for new apps than IT departments can deliver
- For developers, this means that a world of opportunities has just opened up!



BUILD – Windows Platform

Windows

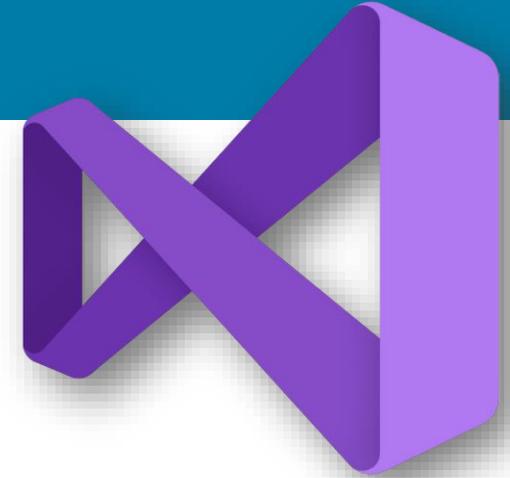
- 21H1 has rolled out
- Another push for ARM
 - Qualcomm ARM Kit
- Linux GUI support

Windows Future

- Not much is known at this point, but the fall update ("Sun Valley") is supposed to be big, with an overhauled UX
- We expect that there will be a new Windows Store
- We are expecting that there will be some interesting announcements over the next weeks and months

Microsoft Edge News

- Edge 91 Update rolls out
- Features such as sleeping tabs and startup boost
- WebView2 has now been available for a while



BUILD – For Developers

.NET ecosystem momentum

> 5M

.NET developers

In Visual Studio family

#1

Most Loved Framework (2019 & 2020)

.NET Core

Top 30

Highest velocity OSS projects

github.com/dotnet
github.com/aspnet



Top 5

Language on GitHub

C#



7X

Faster than Node.js

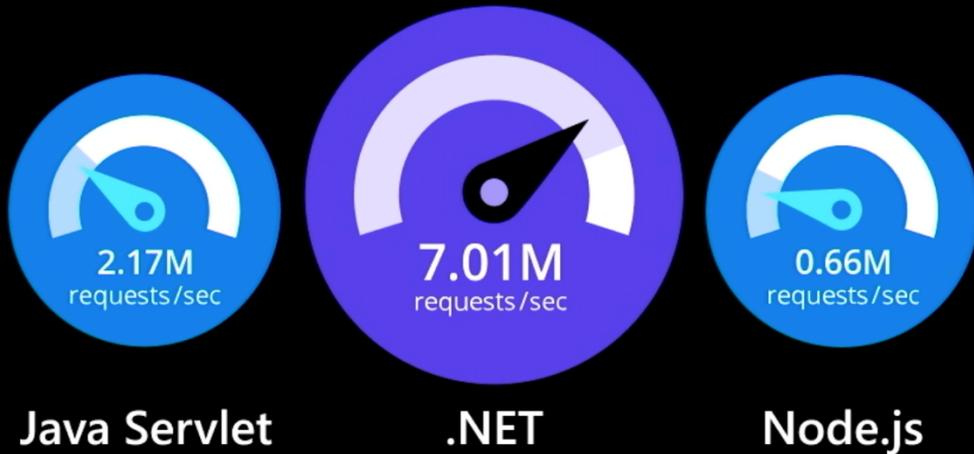
ASP.NET Core

40%

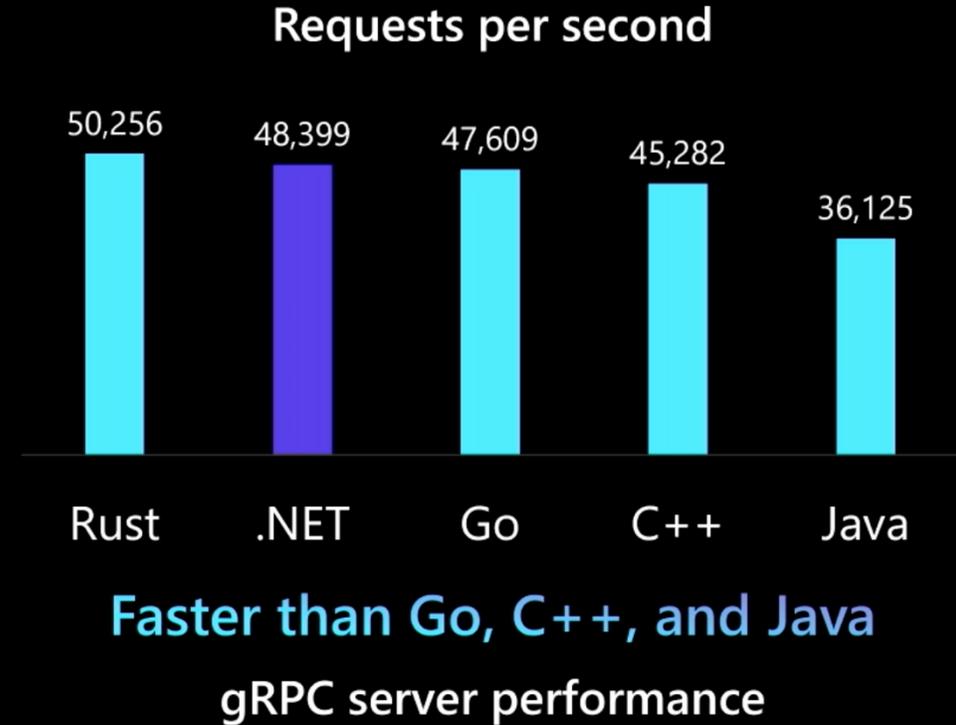
New to .NET are students

dot.net download survey

.NET 5 performance



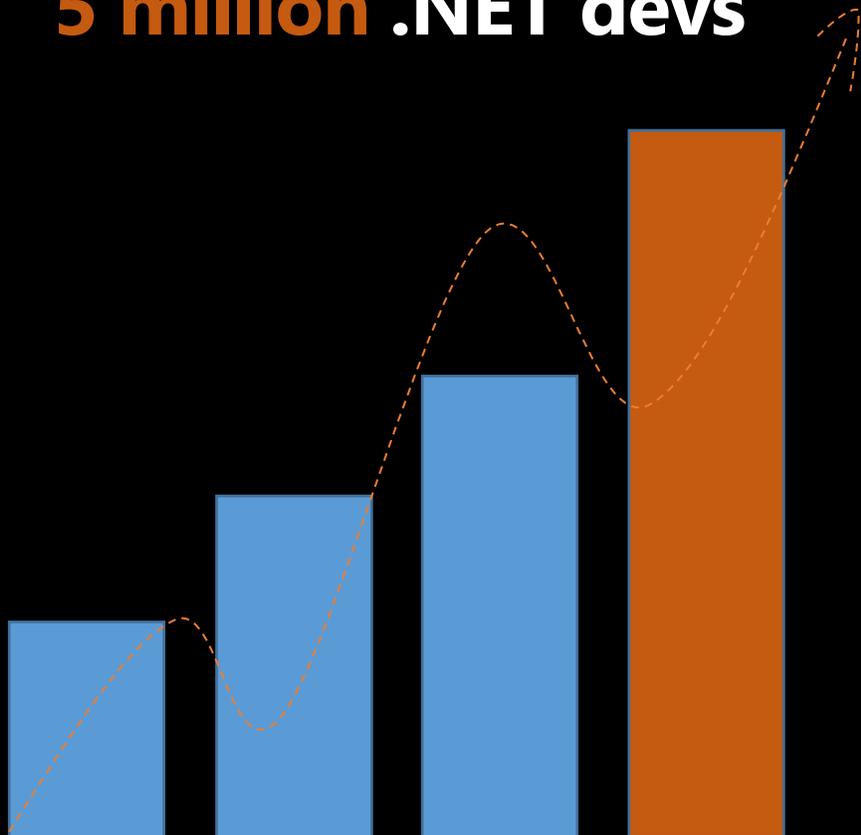
> 10X faster than Node.js
ASP.NET Core web framework



Sources: <https://www.techempower.com/benchmarks/#section=data-r20&hw=ph&test=plaintext>; https://github.com/LesnyRumcajs/grpc_bench/wiki/2020-08-11-bench-results

.NET adoption

5 million .NET devs



Visual Studio

+1 million new

Monthly active .NET developers in the last year

.NET Core

+600K new

Monthly active .NET Core developers in the last year

.NET on Linux

2 million

Publishes to Linux from Visual Studio

.NET 6

- “One .NET” comes full circle
 - Finishing what .NET 5 aimed for
- Adds the Xamarin workloads among other things
- Will be released at .NET Conf 2021 (November 9-11)

.NET 6 Preview 4

- This preview can now be downloaded
- Used with Visual Studio 2019 Preview

Visual Studio 2022

- Preview available in the summer
- First real 64bit version of Visual Studio
- Performance improvements
- Support for .NET
- Support for C++ 20
- Updated UI
- Note: There will also be an updated Visual Studio for the Mac

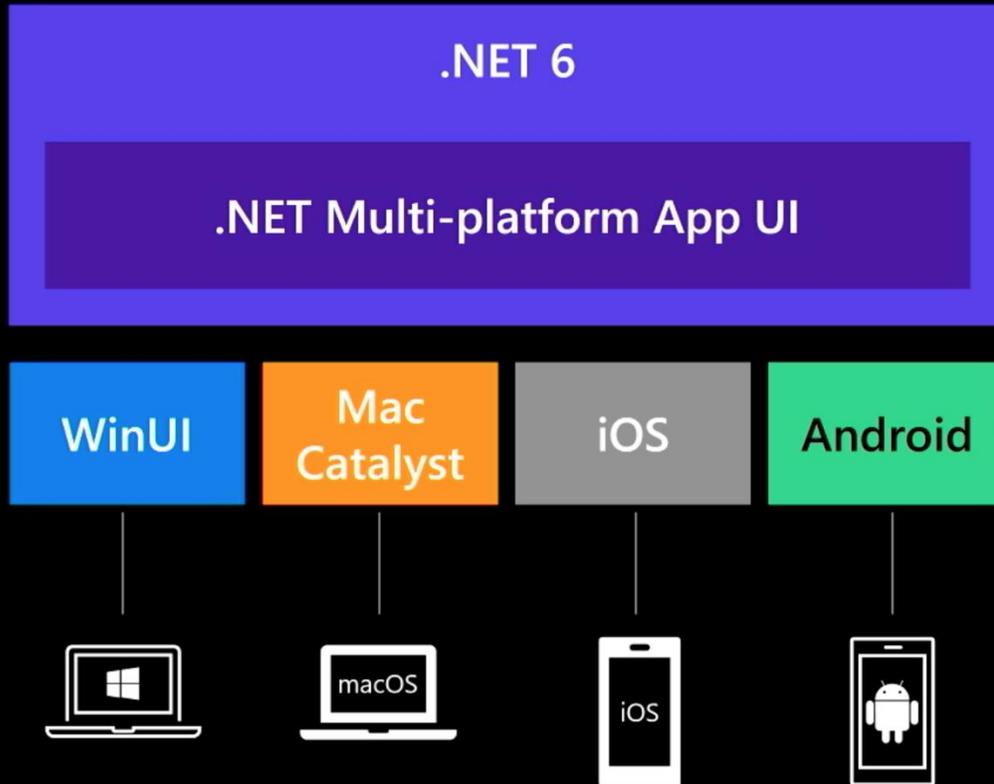
Project Reunion

- Re-uniting all the different Microsoft UI technologies for Windows Desktop development
 - WinUI, UWP, WinForms, WPF,...
- Project Reunion 0.5 has been available since March
 - WinUI 3, WebView2
- Project Reunion 0.8 is now available
 - .NET 5 support, ARM support, general improvements
- Note: 0.x versions are supported versions
- Planned 1.0 release in the fall
- Snapdragon Desktop Development Kit available in the summer

MAUI

- .NET Multi-Platform Application UI
- An evolution of the Xamarin.Forms Toolkit
- XAML-based development experience for rich applications
- Supported on Android, iOS, macOS, and Windows
- Access to each platform's native features
- Ships with .NET 6 this fall

.NET Multi-platform App UI



Cross-platform, native UI

Single project system, single codebase

Deploy to multiple devices:
mobile and desktop

General availability in .NET 6

github.com/dotnet/maui

State of .NET – February 2021

- Our February State of .NET Event had a focus on Windows Desktop Development
- Watch the recording online
- Note: This was our 2nd most popular event ever!
- www.StateOfDotNet.com

Blazor Web Development

- Blazor is moving along nicely
- Blazor Desktop Apps are being added in the .NET 6 timeframe
- They can be combined with MAUI

Build Cross Platform Apps With Photino



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- Lightweight open-source framework for building native, cross-platform desktop applications with Web UI technology.
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- [Github.com/tryphotino](https://github.com/tryphotino)

Playwright

- A new Open-Source UI testing toolkit for modern web apps
- Script-based testing of HTML-based UIs
- Test-scripts can be recorded
- <https://playwright.dev>



Hot Reload

- Microsoft is working on a really cool Visual Studio debug feature called "Hot Reload"
- This feature enables developers to change code on the fly while the app is running in debug mode and see the changes right away
- Think of it in the same terms as editing an HTML page on the fly, but in much more complex scenarios
- Unfortunately... I really couldn't get that working for a demo 😞

.NET 6/C# 10 Minimal APIs

```
using Microsoft.AspNetCore.Builder;
```

```
var app = WebApplication.Create(args);
```

```
app.MapGet("/", (
```

```
app.Run());
```

```
using var httpClient = new HttpClient();  
httpClient.BaseAddress = new Uri("https://atlas.microsoft.com/weather/");  
var baseQuery = $"api-version=1.0&subscription-key={app.Configuration["SubscriptionKey"]}&unit=imperial";  
  
Task<T> GetAsync<T>(string path, string query) => httpClient.GetFromJsonAsync<T>($"{{path}}?{{baseQuery}}{query}");  
  
app.MapGet("/weather/{location}", [EnableCors("weather")] async (Coordinate location) =>  
{  
    var currentQuery = GetAsync<CurrentWeather>("currentConditions/json", $"&query={{location}}");  
    var hourlyQuery = GetAsync<HourlyForecast>("forecast/hourly/json", $"&query={{location}}&duration=24");  
    var dailyQuery = GetAsync<DailyForecast>("forecast/daily/json", $"&query={{location}}&duration=10");  
  
    // Wait for the 3 parallel requests to complete and combine the responses.  
    await Task.WhenAll(currentQuery, hourlyQuery, dailyQuery);  
  
    return new  
    {  
        CurrentWeather = currentQuery.Result.Results[0],  
        HourlyForecasts = hourlyQuery.Result.Forecasts,  
        DailyForecasts = dailyQuery.Result.Forecasts,  
    };  
});  
  
app.Run();
```

GitHub

- GitHub is gaining in importance every day
- Many of the things coming out of Microsoft now completely revolve around GitHub
 - Especially for things like CI or DevOps
 - GitHub Actions drive a lot of functionality
- Note: Azure DevOps continues to be supported, but GitHub is clearly the future

Mark Your Calendar!

Webinar: State of .NET - .NET 5 & .NET 6 Preview - with Markus Egger

- **Wed, June 30**
- <https://bit.ly/3pci7Ut>

June 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			



BUILD – Azure



The app of the future
is **cloud native**

Azure Main Areas

- Cloud-Native Technologies
 - Microservices, Containers, Kubernetes Service, Application Services, APIs, Functions, Dapr (Distributed Application Runtime), DevOps
 - Cloud Databases
 - Azure Arc
- AI & Machine Learning

State of .NET – April 2021

- Last month's State of .NET Event focused entirely on Azure
- The recording is available online for free
- Note: There were prior recordings for Azure as well
- www.StateOfDotNet.com



BUILD – MS Teams

MS Teams

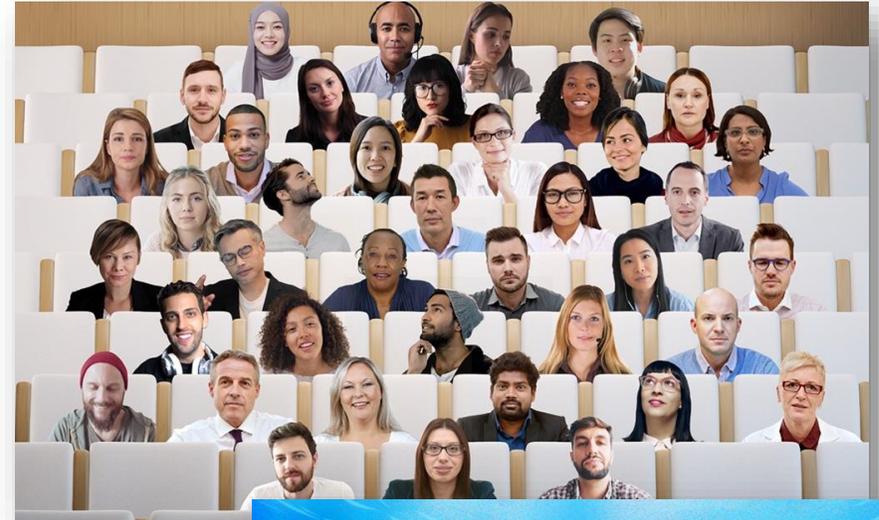
- Teams is the fastest growing Microsoft product ever
- Currently at 145 million **daily** active users!
 - More than twice what it was a year ago (and the pandemic was already in full swing then)!
- This is a very interesting developer platform

MS Teams Toolkit

- Extensions are available both for Visual Studio and Visual Studio Code
- This is an area of very active development, so expect these extensions (and associated APIs) to be updated very frequently

MS Teams Development

- New Meeting APIs
- New Together Mode Toolkit
- New Media APIs
- Real-time access to audio and video streams
- Developing for the Teams App Store

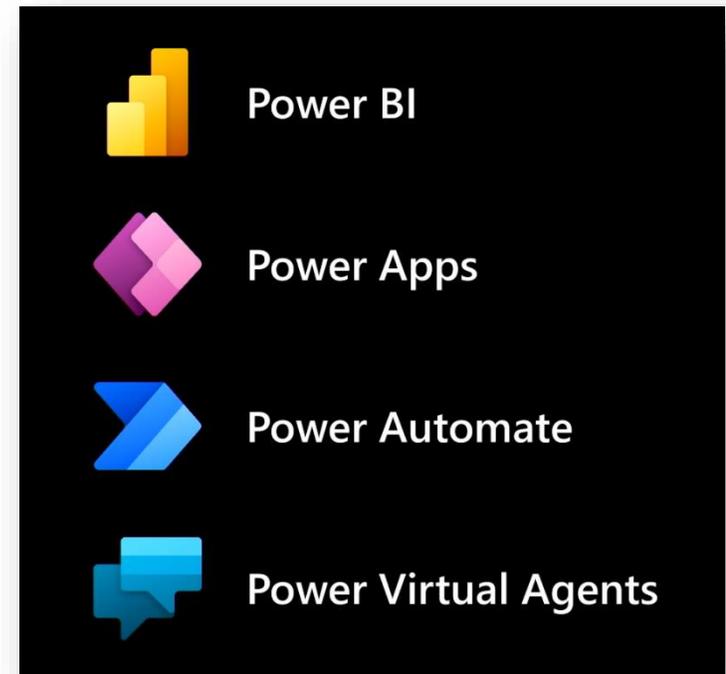




BUILD - Power Platform

Power Platform Overview

- A platform that enables “Citizen Developers” and “Code-First Developers” to work together
- Codeless development
- “Application islands”
- Hugely extensible



Extensibility Model

- Connectors
- UI Controls
- Services

Other Announcements

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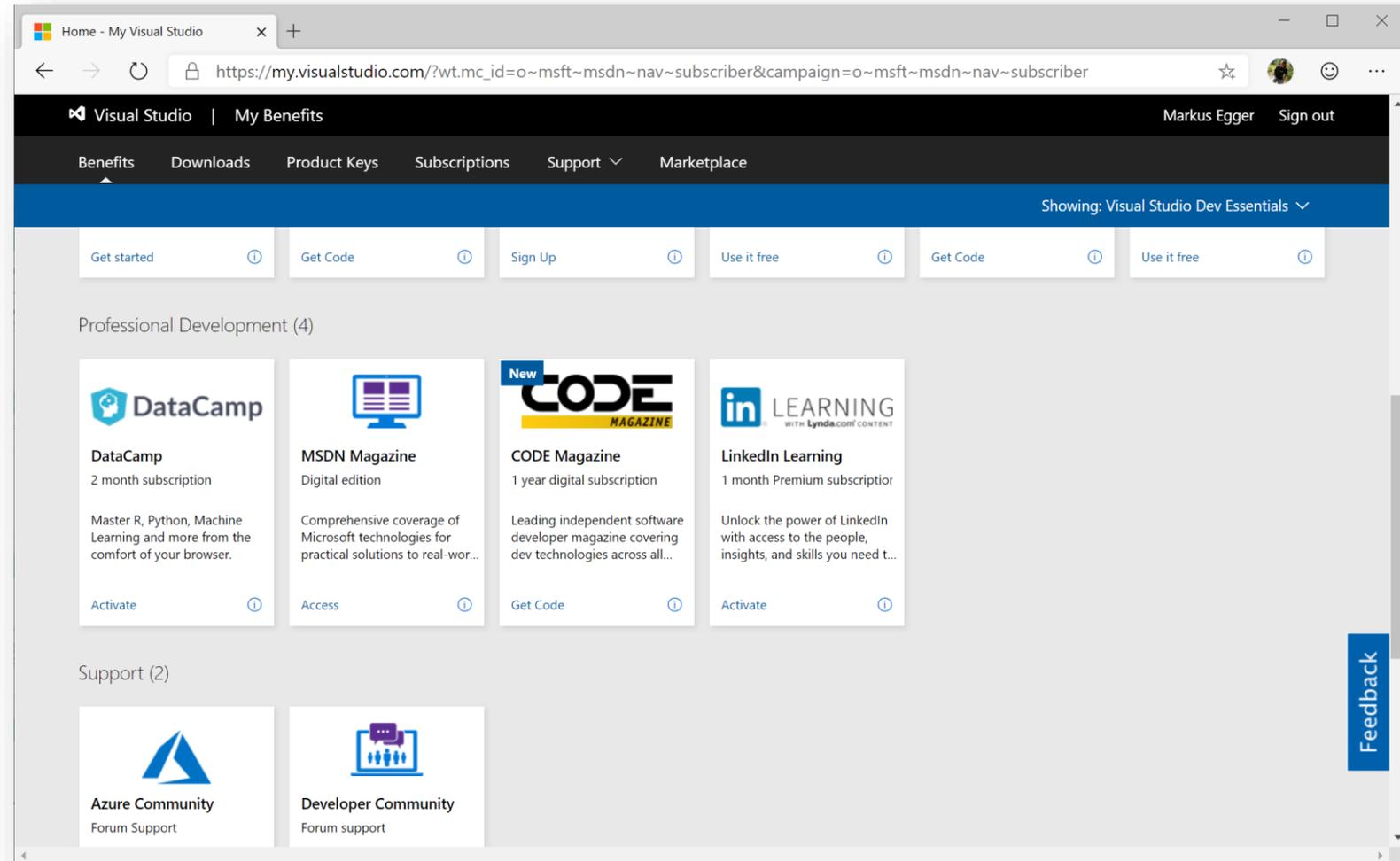
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- Available for iOS & Android



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- **Wed, June 16**
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Q&A

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